

THE FOUNDATIONS OF PEACE.

By F. A. W. Gisborne, Hobart, Tasmania.

LITTLE more than six years ago the world emerged, bleeding and exhausted, from a struggle which, directly or indirectly, caused the destruction of more than twenty million human lives and spread desolation over some of the fairest and most populous regions of Europe. The repercussions, both political and economic, of that tremendous eruption of national passions, and clash of opposing interests and ambitions, still disturb the tranquillity of many countries far removed from those which were the battlefields of the contending armies, and which suffered most acutely from the scourge of war. Never before in the world's troubled history has so much havoc been wrought within so brief a space of time. And in consequence never before have the minds of all thinking men been more occupied with the task of devising means by which the recurrence of such horrors may be prevented.

Optimists up to the fateful year 1914 confidently assured us that war between highly civilised nations had become impossible. Financial restraints, the advance of civilisation, the spread of culture, the ramifications of commerce, and the assumed growth of a feeling of fellowship among all the world's races, they declared, absolutely precluded the possibility of any future resort to arms. Other authorities based their hopes on the pacifying influences of universal education and the triumph of popular institutions. But all those assurances and confident anticipations of a coming age of peace were falsified by events. The vaunted resources of civilization failed in the hour of supreme trial. The Tree of Life of old Norse mythology, though adorned with the brilliant flowers of culture, once more produced in abounding measure the bitter fruits of strife.

It will be admitted by all that no real preventive of war can be devised until the true causes of war are recognised; and the suggestion may be hazarded that hitherto these have been either ignored or imperfectly appreciated both by idealists and statesmen. The indisputable fact that, in spite of all the material and intellectual progress made by the great nations of the world during the last century, war in one form or another has been almost chronic during that period shows in itself that those improved social conditions which are usually implied by the vague term civilization cannot, in

themselves, ensure the preservation of peace. The arts of destruction, indeed, have fully kept pace with those of construction, and the mental and physical energies of mankind during the last half century particularly have been largely occupied with the direful task of inventing new instruments for wholesale slaughter. In his useful little handbook, "Wars and Treaties," Mr. Arthur Ponsonby has supplied us with brief details of no fewer than forty serious wars, either civil or international, which occurred between Waterloo and the date of the outbreak of the late gigantic conflagration; and the list, formidable as it is, does not include the numerous minor conflicts that broke out within the same space of time between colonising Powers like Great Britain and France, and the barbarous or semi-civilized tribes scattered along the frontiers of their Asiatic or African dominions. Nor does it embrace two frightful contemporary insurrections in China which have been declared on good authority to have been accompanied by a mortality as heavy as that caused by all the wars raged in Europe during the nineteenth century. And he would be credulous indeed who could believe that the last "war to end wars," (a seductive phrase less frequently heard now than some years ago, even in political circles), has succeeded in achieving its ascribed purpose.

Some causes of war which operated frequently in past times have fortunately disappeared, or become practically innocuous. With the extinction of absolute monarchy what were formerly called "dynastic" wars have been abolished. The caprice, vanity or madness of a single despot can no longer involve millions in sanguinary strife. Religious wars on a great scale, too, happily for mankind, seem unlikely to recur. The age of the Crusades is past, and we may at least hope that the flames of Islamite fanaticism expired at Omdurman. Yet even among the most cultured communities there lingers a spark of the martial spirit of primitive religion. In struggles between Christian nations it is still the practice for each combatant to claim with confidence the exclusive favour of the God of Battles.

Wars may be roughly classified as wars of passion and wars of policy. While those belonging to the former group seem to be becoming fewer with the decay of religious and racial fanaticism, and the spread of intellectual enlightenment, the number of wars deliberately planned and undertaken for the promotion of national objects shows no immediate signs of diminution, rather the reverse. "War," declared a German writer in the "Vorwärts" some years ago, "is rooted in the opposing interests of the nations as are revolutions in the opposing interests of the classes." The generalisation is correct as far as it goes, though manifestly it does not go far

enough. In revolutions, class and political passions and physical necessities supply the driving force; in wars between nations the impulse comes, partly from inherent racial antipathies, but more from the desire on the part of the aggressor to obtain by force what it believes to be necessary for its safety or prosperity. Passion plays a far greater part in civil than in international struggles, and the former, therefore, are invariably characterized by a greater degree of ferocity than the latter. Wars prompted by motives of policy usually arise from conflicting colonial aspirations, land hunger, commercial rivalries and disputed claims to maritime supremacy. "Dying nations," as the late Lord Salisbury once remarked, are particularly dangerous factors in causing inter-national friction. Not unfrequently expectant beneficiaries come to blows over their death-beds. Persia, India, China, Spain, and other more or less decadent countries have at various times illustrated the disturbing influences exercised by opulence allied to senility or decrepitude. "Trade" wars have, in the past, been particularly numerous. To insular and over-populated countries like Great Britain and Japan commercial interests are vital, for their inhabitants must sell their surplus manufactured goods abroad in order to buy food and raw materials needed to sustain the multitudes at home. Long ago, Lord Chatham uttered timely words of warning to his countrymen on this subject. "When trade is at stake," he declared, "it is your last entrenchment; you must defend it or perish." And, referring to sea power, the eminent German economist, Friedrich List, picturesquely described a nation without ships as "a bird without wings." Tariffs are always in a greater or less degree provocative. To give but a single instance, Colbert's fiscal measures in 1667 were directly responsible for the outbreak of war between France and Holland five years later. More than two thousand years ago the interdependent questions of commercial and maritime supremacy provoked the prolonged death struggle between Rome and Carthage. The establishment of universal free trade and freedom of the seas would undoubtedly do much, not indeed to eliminate the primary causes of strife, but to remove those that are secondary.

The remedies, or preventives, usually advocated for the mitigation or abolition of war may now receive brief notice. Some are obviously fantastic. Tolstoy's panacea of non-resistance, for example, hardly deserves serious consideration. As things are, it would mean national suicide to the people foolish enough to adopt it. The ethics of primitive Christianity cannot safely be applied to State policy without rational modification. To turn one's cheek to the smiter and bestow one's possessions on the robber would only encour-

age thieves and bullies. The fellow-countrymen of the Russian idealist during the last few years have only too convincingly demonstrated the folly of his doctrine.

The advocates of general and complete disarmament for the prevention of war apparently overlook the fact that such a course of action, even were it feasible, would place civilization at the mercy of savagery. But a moment's consideration will show that universal disarmament is impossible. Great nations cannot be kept under constant surveillance, and weapons of some kind will always be within the reach of those who wish to use them. Moreover, since the most deadly of modern instruments of warfare are now manufactured in chemical factories, the products of which are essential to many necessary industries, it is clear that every country possessing such factories will always have at its command the means of spreading wholesale destruction. That, within certain fixed limits, international compacts such as that embodied in the Covenant of the League of Nations may have the useful effect of removing the minor causes of war, allaying suspicion, and diminishing friction may readily be admitted. But all such compacts are open to the weighty objection that their usefulness depends entirely on the observance by all the parties to them of the most scrupulous good faith. It is not enough for the signatories to be men of honour. They must have notions of honour behind them. Otherwise they give the perfidious nation most dangerous advantages over those that are honest. Dr. L. P. Jacks in his suggestive little collection of essays entitled "Realities and Shams," has emphasised another weak point in international arbitration. "The validity of an international compact," he writes, "obviously assumes that each and all of the contracting governments have sufficient authority in their own houses to ensure the adhesion of their nationals to the engagements made. Of how many existing governments can it be said that they possess this power?" And, one may also ask, what likelihood is there that undertakings, no matter how solemnly given, by a small group of politicians, or diplomats, in the name of a nation to-day will be regarded as sacred by their successors ten or twenty years hence? Those who possess some knowledge of human nature, especially of political human nature, will be very sceptical indeed on this point. And the repudiation of engagements made under one set of conditions may be essential to the prosperity, or even existence, of a nation when conditions have undergone a complete change. Finally, no nation can, or will, consent to submit to arbitration any question involving national life or death. The instinct of self-preservation disregards all treaty obligations, and at the last resort every high-spirited people will prefer war to martyrdom or degradation.

A single historical example may be cited in support of the statement that no reliance can be placed on international agreements for the limitation of armaments. In 1807, by the introduction of the short service system into the Prussian Army, Scharnhorst completely eluded the provision in the treaty made shortly before with France under which Prussia was forbidden to maintain an army exceeding in number 42,000 men. In consequence, six years later, on the renewal of hostilities between the two countries, Prussia was able to place over 200,000 thoroughly trained and well-equipped men in the field. And it is significant that, outside France, the artifice so successfully practised evoked admiration rather than censure.

There are many well-meaning persons who rely on popular education, anti-war propaganda, and moral and religious teaching to abolish war. But they assume a sudden and miraculous transformation of human nature. The resources of oratory, alas, have more often been used to arouse than to subdue the stormy passions which impel strife. The advent of the peace-maker predicted by an ancient poet still seems far off:—

"Ille super Gangem, super exauditus et Indos

Implebit terras voce, et furialia bella

Fulmine compescet linguæ."

Even the eloquence of Cicero failed to form such a task. In oratory we find more often the thunder of passion than the illumination of reason. Only one of the world's great religions, Buddhism, has exercised a consistently peaceful influence over mankind. Two of the others for centuries marched through slaughter to spiritual domination. Popular conceptions of the power of education to promote peace are altogether extravagant. The fundamental fact is usually overlooked that the teacher can but draw out and develop the inherent capabilities of the pupil. He cannot, however skilful and earnest he may be, create faculties and aptitudes which Nature has not planted in the scholar's mind. No schoolmaster, by the exercise of some kind of pedagogic magic, can transform the boy cursed with predatory or ferocious instincts into a model of juvenile virtues. Rather, in many cases it is to be feared, by arming the depraved child with knowledge, the teacher makes him a more potent instrument of future injury to the community than he would otherwise have been. Without, indeed, affirming that burglars and Bolsheviks are the necessary products of the elementary school it may be suggested that the evidence which supports the view that to the modern system of compulsory universal education, a system which favours the development of the mental rather than the moral capabilities of the children, must largely be attributed the increasing number of accomplished scoundrels who now prey on society, or strive to over-

throw it, is difficult to refute.* Private crime differs from national crime only in degree: consequently each additional law-breaker in a country helps to strengthen the anti-social spirit which favours war. Another point deserves notice. The indiscriminate intermingling of children of sound characters with those whose moral qualities are defective inevitably encourages the spread of moral disease, just as the close association of healthy persons with others suffering from infectious or contagious maladies increases the ravages of physical disease. Moral lepers, young or old, should be segregated. To good natures knowledge is wholesome food; to bad ones it may be poison. The exclusion of all moral as well as mental degenerates from our schools, and their special treatment in separate institutions, would do much to check the progress of certain evil social and political tendencies which are now only too noticeable, and indirectly assist towards maintaining both domestic and foreign tranquillity.

The grounds for the widespread but utterly delusive belief that certain political changes, if introduced everywhere, would ensure the preservation of peace require but brief examination. Universal democratic government, some enthusiasts assure us, would mean universal harmony. As a matter of fact, although representative institutions of some kind now prevail in all save two insignificant Asiatic countries, concord among the nations is still far from complete. Those who are so much inclined to denounce monarchies and aristocracies as essentially warlike forget that the world has owed some of its happiest and most tranquil periods, such as the age of Augustus and that of the Antonines, to despotic rule. Of aristocratic governments it may be said without hesitation that their guiding principle is prudence, a virtue which is essentially pacific. The assertion that democracies have always been peace-loving is entirely unsupported by historical evidence. History, in fact, shows that, under certain conditions, and driven by similar internal or external impulses, all governments, irrespective of form, have from time to time been compelled to engage in war; and democratic governments being most sensitive to popular emotions are, perhaps, the most bellicose of all. Indeed, the frequent popular elections, and the continual struggle between parties and classes, which characterize democracy wherever it has triumphed, tend in themselves to keep alive the war spirit. And the checks it imposes on outbreaks of popular passion are nugatory, since the relation of the democratic ruler to the turbulent masses is merely that of the boat to the wave.

* The report of the special committee appointed by the General Assembly of the Presbyterian Church in Victoria about two years ago to investigate the causes of crime laid stress on the defects of the State educational system.

A survey of history does not support the view that in past times democracies have been less inclined to make war than monarchies. The ancient Greek city republics waged incessant wars with one another. Rome, ere the foundation of the Empire, was engaged for centuries in a chronic struggle for supremacy with the neighbouring Italian States. The birth of the French republic was immediately followed by the most devastating series of wars Europe had seen since the close of the Middle Ages; and even the United States, in spite of the advantages of geographical isolation and ample scope for peaceful expansion in a vast and almost empty continent, has been engaged within a period of less than a century and a quarter in wars with Great Britain, Spain, Mexico, and Germany; and in the course of the stupendous civil conflict which raged between the years 1861 and 1865 barely escaped disruption. Neither has unbroken peace reigned in Mexico and among the republics of Central and South America since those communities freed themselves from the iron despotism of Spain. It is true, certainly, that each of the republics of San Marino and Andorra has studiously refrained from a policy of armed aggression. But pygmies have sound reasons for refraining from attacking giants, and lions do not prey on mice. Switzerland, a state of composite nationality, is practically the only example of a modern republic whose policy may be described as having been consistently peaceful for a long period (as mercenaries, nevertheless, Swiss soldiers have played a distinguished part in many European wars), and this is to be ascribed chiefly to geographical and ethnic reasons.

The most important of the direct and immediate causes of war have now been glanced at, and an attempt has been made to show that all the remedies hitherto devised to check their operation have failed, and must continue to fail, to effect their purpose. Let us now investigate the root causes of war. These, briefly summarised, seem to be over-population and mental and moral degeneracy. The first needs no explanation. Obviously, vast and increasing masses of human beings pent up in a comparatively small territory must sooner or later, by force if necessary, invade neighbouring countries where means of subsistence can be obtained. With them it is literally a question of fight or starve, conquer or die. As regards the second, it is not of course suggested that every nation which becomes involved in war contravenes the moral code. In many cases—examples are too familiar to need quotation—a nation takes up arms under irresistible moral compulsion. In a few, it may even be said that each of the combatants may claim some degree of moral justification. But unquestionably evil passions, such as those of racial or religious hatred, ambition, greed, jealousy or the de-

sire for revenge, are responsible for many violent collisions between nations. Good influences sometimes become perverted and either sow or hasten the germination of dragons' teeth. Religion is a fountain which pours forth bitter waters as well as sweet. Patriotism is apt to ferment into megalomania. Honour, even, may "find quarrel in a straw." So long as passion disturbs the human mind and from time to time dominates reason strife between individuals, classes and nations will continue. So long as one hundred human beings struggle to live on a portion of the earth's surface capable of maintaining in comfort only fifty there will be armed aggression. So long as boys fight in public schools and men in public houses, there will be war. Moral diseases, unhappily, are as infectious as physical. A nation which, infuriated by some real or fancied wrong, contracts what is commonly called the "war fever" becomes morally plague-stricken. It suffers from the resurgence of those primitive instincts which, in bygone days, prompted the frenzy of the berserker and the blood-lust of the priest of Baal.

The abolition of war, then, requires firstly, the elimination of the fiercer passions from the human mind by the combined agencies of eugenics and moral education; and, secondly, the scientific and selective regulation of human increase in such a way as to prevent any country from suffering hereafter the miseries of over-population and famine. In a world where only the physically, mentally, and morally superior were permitted to become parents, and where the population of each country was carefully adjusted to its means of supporting life in comfort and happiness, the wish long ago expressed in the immortal Greek epic would at last be fulfilled:—

"O! that from gods and men might perish strife

And wrath which stirs to madness e'en the wise."

It is significant, by the way, that Homer should have placed those words in the mouth of the greatest of the warriors whose exploits he celebrated. And it is a truism to-day that the strongest detestation of war is to be found among those who have taken an active part in it.

All intelligent persons must agree that racial improvement makes for peace. Great differences of opinion, however, exist as to the best methods for bringing such improvement about. In political circles particularly there is a tendency, much deplored by biologists, to rely mainly, if not solely, on so-called humanitarian methods such as the bestowal of grants and endowments on the less capable members of the community, the free provision of hospitals, orphanages, and other charitable institutions, and the improvement of housing conditions. Judicious measures taken both by the State and by private individuals and associations for effecting beneficial

changes in the environment of the people are certainly to be commended. But in the light of recent scientific investigations it were a pernicious error to regard external conditions as all-important. Heredity is the seed; environment only the soil. Long before the science of heredity was heard of, this fact was perceived. In such familiar Latin quotations as "*Ebrii gignunt ebrios*," "*fortes creantur fortibus et bonis*," the truth of the transmission of qualities from parents to offspring was recognised. Even the most illiterate stock-breeder is aware that heredity dominates environment. He does not try to transform a carthorse into a racehorse by the simple method of keeping it in a fine stable and giving it plenty of oats. Such treatment, indeed, would probably encourage it to kick the cart into fragments. And yet, with slight modifications, many of our political and other reformers apply this process to the improvement of their own species.

In his striking work, "*The Revolt against Civilization*," Mr. Lothrop Stoddard has lately delivered an impressive warning against the dangers of racial degeneracy which now confront all of the world's most highly civilized communities. Mr. Harold Cox's illuminating study of a similar subject entitled:—"*The Problem of Population*," and the researches of numerous well-known biologists in England, America, and elsewhere all lead to the painful conclusion that at the present time the superior human stocks are rapidly becoming swamped by the inferior. Of the mass of evidence collected by writers of the class particularly referred to only two or three typical examples need be selected. In an article headed, "*The Feeble-minded*," written by Dr. A. F. Tredgold, which appeared in the "*Contemporary Review*," June, 1910, a summary was given of the results of the investigations during a term of four years of the English Commission on the Care of the Feeble-minded. These brought to light several most sinister facts. It was found that, to quote the writer just mentioned, "the birth rate in England is declining, but the decline is not general but selective, being confined to the best and most fit elements of the community, while loafers, incompetents, the insane and the feeble-minded continue to breed with unabated vigour." In one work-house alone 16 feeble-minded women had produced 116 children, and while careful inquiries showed the average number of children in mentally degenerate families to be 7.3, that of the whole population was only 4.63. Twenty per cent. of the criminals in English prisons were found to be of weak intellect; and since feeble-mindedness is usually associated with emotionalism, liability to outbreaks of passion, and entire lack of self-control, it follows that the greater the proportion of weak-minded persons in the population of a country, the greater

the danger of those outbursts of popular fury which often lead to war. Mr. Cox quotes official figures showing that out of 2,425,000 men who were medically examined in Great Britain in the year ending 1st November, 1918, only 36 per cent. were classed among those who had attained "the full normal standard of health and strength," while 10 per cent. were described as "totally and permanently unfit for any form of military service." As illustrating the relative rates of increase prevailing among various social classes, Dr. Stevenson, the Superintendent of Statistics at the General Register Office, supplied the First National Birth Rate Commission with figures showing that in the year 1911 the number of births per 1000 married males under the age of 55 was 119 among the upper and middle classes, while among unskilled workmen it was 213. In the United States matters seem to be yet worse. A distinguished American biologist, Davenport, quoted by Mr. Stoddart, calculates that, according to present tendencies, 1000 Harvard graduates living to-day will only have 50 descendants two centuries hence; whereas an equal number of illiterate Rumanian immigrants, if their present rate of increase be maintained, will have no fewer than 100,000 descendants at the termination of the same period. Investigations conducted by Professor Cartell, showed that among 440 married American men of science with completed families, the average number of children in each family was but 1.88, about 12 per cent. of whom died before marriage. The ominous results of the intelligence tests applied a few years ago to the American Army are familiar to all interested in the subject; and since a low degree of intelligence usually implies a high degree of combativeness, the widespread mental degeneracy they revealed is scarcely encouraging to the lover of peace. Unhappily the application on a limited scale of similar tests to various classes of the population in Great Britain has given very similar results.

All available evidence seems to show that, largely through the efforts of multitudes of political and philanthropic husbandmen, the human tares are fast choking the wheat. The jungle is rapidly encroaching on the cultivated fields. Humanitarian laws for many years past have been filling our gaols, hospitals and asylums. Procreativity has been encouraged among the inferior types, and discouraged among the superior. The worthy and the competent have been overloaded with taxes for the benefit of physical, mental, and moral weaklings; and the law, expressly for the purpose of stimulating fecundity without discrimination, has allotted to the idle, incapable, and unintelligent worker, the same amount of remuneration as that besowed on his far more efficient and deserving comrade. Quantity has been considered; quality ignored. And many

benevolent and entirely sincere persons, while preaching peace and human brotherhood, have at the same time been scattering profusely the seeds of future wars.

It is, however, in a measure consoling to perceive signs that the danger to which civilization is exposed by the inordinate increase of human beings of a comparatively inferior type, and the concurrent diminution of the numbers of superior men and women, is now generally recognized in educated circles. People afflicted with hereditary maladies are beginning to understand that the gift of life may be a curse as well as a blessing, and to listen to the appeal of the unborn. Unhappily, though, there are many who, for reasons of excessive delicacy, refrain from preaching what they wisely practise. Consequently, where restraints are most needed, they are not applied. While the enlightened and the conscientious recognize their duty to posterity, the ignorant, the improvident and the irresponsible continue to increase the sum of the world's miseries, and to provide fuel for future conflagrations. These people are the real makers of wars. To save civilized society from a universal relapse into barbarism such as Russia has lately suffered through the too successful uprising of the country's baser human elements, and to ensure for coming generations the enjoyment of their natural birth-right of physical, mental and moral soundness and capacity for happiness, it is essential that the State should check the devastating procreative activities of those who are unfit to be parents, teach and if necessary enforce the observance of the sacred responsibilities of parenthood, and impress on the minds even of the most frivolous and thoughtless a recognition of the truth that it may be a far deeper sin to create life than to destroy it.

Two processes are included in a complete eugenic policy, one positive, the other negative. The former aims at the increase of superior human stocks; the latter at the elimination of the inferior. Obviously the last mentioned task must be undertaken first; and since the selection and segregation, or sterilisation, of deficient can only be carried out under sanction of law, State action is indispensable. Educative measures and the force of an enlightened public opinion would probably suffice to ensure afterwards the intelligent application of eugenic principles in their positive sense. And no really enlightened society would permit that unlimited increase of its members which would inevitably lead to its own destruction. Any discussion of the legislative and administrative methods by which the weeding out of the undersirables might be accomplished at the least cost in suffering to the class whose existence was a menace to the public welfare lies outside the scope of this paper. Undoubtedly the work of purifying society by the gradual removal of

all its noxious elements would demand the exercise of supreme ability, and entail on the whole community very heavy sacrifices. But one important question deserves brief notice. Is any State where democratic institutions prevail likely to adopt, and pursue continuously, a policy tending towards racial betterment? Can we expect a modern democratic government based on universal suffrage to devise and carry out measures which very large numbers of uninformed or prejudiced people would denounce as cruel and unjust invasions of personal liberty, and which, it is to be feared, would only be unreservedly supported by a small minority of the electors?

This seems too much to be expected. For democracy means and, so long as present conditions continue, must mean the political supremacy of the lower over the higher intelligence. It is the direct negation of the principle that the superior mind should command, and the inferior obey. Political equality, unless indeed we regard character and intellect as counting for nothing in the conduct of public affairs, connotes moral and intellectual equality; but such equality never has existed, nor is likely ever to exist. Under the alternating, capricious tyranny of majorities, classes and parties no country can hope to enjoy real peace and the contentment which is essential to happiness. Neither can it pursue a settled line of policy of any kind. The counsels of Ulysses may prevail to-day; those of Thersites to-morrow. Parliamentary majorities reflect the whims rather than the will of the people; and what is known as "crowd infection," originating usually in the invention of some attractive catchword, decides the results of most popular elections. Democracy is far more prolific in deluders than in leaders. Of what use would it be for a wise government one year to collect and segregate all the imbeciles in a country when the next, in a paroxysm of sentimentality, the electors might insist on their liberation? Opportunism and instability have always been the bane of popular governments and their want of strength and consistency of purpose, and, it must be added, their tendency to elevate from time to time to positions of momentary authority men endowed with supple minds and persuasive tongues, but, in their public capacities, entirely devoid of principle, render them incapable of steadily pursuing great objects. Only governments that are wise, strong, and stable can successfully carry out great schemes for the ultimate good of humanity.

It would seem, then, that before effective measures for the prevention of war by the removal of its root causes can be taken the age of democracy must pass away. Demos must share the fate of the Pharaohs and Caesars of antiquity. In all civilised countries methods of government and social organization will have to be de-

vised which will ensure, so far as possible, that power shall only be entrusted to worthy hands, and, a matter of equal importance, shall remain in those hands. There are many nowadays who regard democracy with a kind of superstitious awe, and consider those who condemn it as almost guilty of sacrilege. But democracy, after all, as Sir Henry Maine and other political thinkers have pointed out, is only a form of government, and as such is open to free examination and criticism. If proved by experience to have failed as an instrument for the wise regulation of human affairs it is open also to condemnation. Political as well as religious superstitions are mortal. A late Archbishop of York, Dr. Magee, once aptly reminded us that King Demos is attended, not only by courtiers, but also by court chaplains; and some of his stoutest supporters may be found among the latter. The modern devotee of democracy, whether cleric or layman, might reflect, however, that three centuries ago, even in the most cultured circles, there was as strong a belief in witchcraft as there is now in the virtues of government by Parliaments elected by popular majorities. And perhaps here and there even in this age may be found an irreverent sceptic who doubts whether the inhabitants of a country are happier and more prosperous when their laws are made and unmade by congregations of ephemeral, political chatterboxes than they would be were the control of their affairs entrusted to a small permanent council composed of statesmen fitted both mentally and morally for the exercise of sovereign powers. At all events that incessant class war which is inseparable from the working of popular representative government must end before the era of peace begins.

The crying need of the world to-day is that of great men. Little men are always vain, peevish and quarrelsome. The truth contained in Napoleon's saying: "The men are nothing; the man is everything," applies as much to times of peace as to those of war. But as it is manifestly impossible for any society to obtain and retain permanently the services of an autocrat possessed of transcendent virtues and abilities to manage its affairs it would seem that the best hope for the future lies in the triumph of that aristocratic principle which conforms most closely to natural law and the real needs of mankind. The regeneration of the human race, and the maintenance of concord among its many families, demand the sole exercise of ruling functions by the true aristocracy, in other words, by those who possess in the largest measure the essential endowments of wisdom, knowledge, courage and virtue. A government so constituted would take the measures necessary to eliminate human waste, and to prevent the excessive increase of population, recognising that the greatness of a nation depends, not on the

quantity, but on the quality of its citizens. For international agreements for the limitation of armaments it would substitute agreements for the limitation of families. Its laws would be inspired by a philanthropy so enlightened as to seek the lasting good of the race instead of the gratification of the passing desires of the individual; by an insight so true as to perceive that human happiness depends more on mental and moral than on material conditions; by a humanity so elevated as to recognize, not only the right to live, but also, in the case of each sufferer from incurable physical, mental or moral disease, the right to die; by a compassion so tender that it would no longer allow the unhappy progeny of the vicious and the diseased to transmit to their innocent descendants, in ever-growing measure, the curse of inherited affliction. Under a rule so wise and benign the stormy passions and the dire physical necessities which now impel nation against nation would gradually disappear. The belief that life must be a continual struggle, that good can only arise from ill, and that happiness must be bought with suffering, a belief well expressed in the mournful line of an old Greek tragic poet:—

“Sing a dirge! singe a dirge; but let right prevail,”

would at last be refuted; and, cured of its former sad delusions, the world would tardily appreciate the full significance of the teachings of that ancient Hebrew philosopher who extolled the virtues of wisdom, and told mankind in words of imperishable truth and beauty that “her ways are ways of pleasantness, and all her paths are peace.”

NOTE.—The objection may be raised that were the most highly civilised countries to adopt measures with a view to the prevention of the excessive increase of their inhabitants, they would expose themselves to invasion and conquest by other countries where such restrictions did not prevail. There would, however, be very little likelihood of this happening, provided the necessary precautions were taken. Well-armed minorities are more than a match for ill-armed majorities; and a comparatively small community fully equipped with all the resources of science, and distinguished by the highest degree of physical and mental efficiency could easily hold its own against all external enemies. A mere handful of modern soldiers, supported by a few inventors, chemists, and experts of various kinds, could disperse multitudes of assailants unprovided with air-craft bombs, long range artillery, deadly gases, etc. The ancient Romans, though they enjoyed but the most trifling advantages over their barbarian antagonists in regard to weapons, and certainly none at all in regard to courage and physical qualities, by virtue of superior discipline and organisation succeeded for centuries in repelling the attacks of much more numerous enemies; and the sole knowledge of the secret of the composition of Greek fire enabled the Byzantine Emperors to hold Constantinople and the adjacent territories long after the fall of Rome. Perhaps, as Mr. Harold Cox suggests, the governments of the Nations whose birth rates were regulated might form a league for mutual defence against those which did not impose similar checks.

—F.A.W.G.

PROBLEMS OF SPIRITUAL EXPERIENCE

IV. FREEDOM AND EVIL.

By W. R. Boyce Gibson, M.A., D.Sc., Professor of Philosophy,
University of Melbourne.

THE central issue in regard to the theory of Freedom is that between Determinism and Indeterminism. Determinism, in its bearing on human action, is the view that man, even as a voluntary agent is determined by the system of which he is a part: it is the view that human conduct, like every other event, is unequivocally determined by antecedents.

William James in his Essay on "The Dilemma of Determinism" has formulated the determinist position in a characteristically clear and trenchant way. "Determinism," he says ("The Will to Believe and other Essays," p. 150) "professes that those parts of the Universe already laid down absolutely appoint and decree what the other parts shall be." Hence everything is predetermined and the Universe is a block-universe. There is no loose play between its parts. Possibilities are illusory: they are merely necessities in disguise. "Possibilities that fail to get realised never were possibilities at all." James then turns his attention more particularly to what he calls "soft" as opposed to "hard" determinism, i.e., to the determinism that admits the existence of ends and values, admits, that is, the teleological view-point, and talks glibly of self-determination, and yet endorses all the main features of the block-universe.

This soft determinism by reason of its belief in values and in the distinction between good and evil is confronted by a dilemma, a dilemma whose left horn is *pessimism*, and whose right horn is *subjectivism*. The world, argues James, is full of evil, and the soft determinist admits it. This evil engenders poignant regret, and this regret, on the deterministic scheme is futile, unreasonable. And yet it persists and makes pessimists of us, for a universe in which evil is to be accepted by us as warmly as good, where all regret for evil is absurd, is an immoral universe, and the loss of all faith in the meaning of ethical values is the very recipe for pessimism.

Now pessimism is a depressing condition and the determinist who still clings to the belief that life is worth living, even if one thinks, will seek for a way out. He finds it in Subjectivism. He will argue thus: "What merely happens in the universe is in itself but a little thing. Its whole significance lies in its relation to *me*, in the way it affects *me*. Our judgments and the feelings that go with them are the main thing: the outward facts are mere perishing instruments for their production and sustenance. This is *Subjec-*

tivism. It accepts the universe as a great drama, full of horrors and yet full of ecstasies, and it has a traceable purpose, namely to give the greatest enrichment of our ethical and dramatic consciousness through the intensest play of contrasts and the widest diversity of characters. The great thing, the thing that really matters is the Subjective reaction, and this may be most glorious where all outward circumstance is most terrible. James admits that Subjectivism is a more rational outlet than pessimism. Accept everything without regret and put into your acceptance all the dramatic zest you can.

And yet how unsatisfactory Subjectivism is; and James, in whom the moralist is even stronger than the artist decides against it on practical grounds. Morality can exist, he argues, only if we subordinate our feeling to some sense of duty or obligation. Subjectivism cannot help us to do this. It cannot justify remedial action of any kind, it stultifies every effort at reform and sends a numbing chill through the very suggestion of active, zestful work. Subjectivism, no less than Pessimism, is incompatible with a Philosophy of Action. Determinism, be it ever so soft, renders unintelligible even the mere willingness to ask independently of one's feelings, for this attitude implies that acts are good or bad, and the belief that an act is bad implies regret at its happening, and regret implies the admission of real possibilities, and this means the disintegration of the block-universe.

Moral and pragmatic considerations force us then into Indeterminism, towards belief in a world in which the distinctive requirements of the will are respected, where possibilities are open and real, where actions may be right or wrong and really effective, and where the judgment of regret becomes intelligible since the regretted action might have been otherwise and remorse may reasonably be followed by reparation and reform. It is true that, on James's view, the presence of real possibilities implies intrinsic looseness in the universe, real disconnection between its parts. The universe is really a multi-verse. Freedom, again, means the complete separability of free agents as first causes. And in order to avoid any ambiguity under this head, James refers to the Indeterminist Universe as a world of Chance. "Chance," he admits, is a brutal word, but it is quite unambiguous since it is incompatible with determinism in any form. To adopt it is to discard all pretence of being that self-defeating creature, a free determinist, with his ambiguous doctrine of self-determination. Chances are undetermined by anything else and disconnected from everything else. A thing's chance-character is what entitles it to say "Hands off!" But "Chance" so conceived has one grave limitation. It is no more than a negative

condition of free activity, the opportunity for free action. It cannot therefore stand for "freedom in its more positive implications. And James virtually admits this when on p. 179 of "The Will to Believe," he tells us that Chance means the opportunity of moral progress, and adds: "This is the only chance we have any motive for supposing to exist."

We pass on to James's significant contention that a world with chances in it is more rational than a world without such chances. It is indeed more rational *for the will*. The volitional situation which includes no live options, no real open possibilities is a misnomer, for the will that has no genuine possibilities to consider is left entirely objectless: its deliberation is futile and meaningless. A possibility is as essential to will as is a problem to the intellect or a value to a feeling. A block-universe may mean something to the man who is content to consider the world as it is (or appears to be): it can mean nothing intelligible to the one who is intent, in aspiration and will, on the world as it is to be. James's insistence on real possibilities and his further insistence that the world is far more rational with them than without them have been of first-rate importance in clarifying the issue and setting the free-will problem on an intelligible basis.

None the less I cannot see that the acceptance of real possibilities necessarily implies, as James maintains, a pluralistic world or multiverse, or that the rejection of the block-universe is tantamount to the rejection of monism in every form. For the practical sciences at any rate possibilities are perfectly coherent data. They are possibilities for a will, they are the data of a perfectly definite field, the field of deliberation. They are the data which connect the will with its world, and with the world as a whole. And this link between will and the world is that of possible connection through action. The subject in this relationship is sufficiently detached from the object to ensure its freedom and yet without discontinuity with the world, since a possible connection, in the sense here in question, is a *real* connection. It needs but little imagination to see that as voluntary agents we are girt on every side with potential relations to objects clad about with possibilities whose best claim to reality lies precisely in the fact that they are still unrealised. These possibilities are the links of connection between ourselves as free agents and the rest of the universe. And what applies to freedom of choice applies also to freedom of creation. To create is not to make something out of nothing, but to turn a possibility into an actuality. Thus through these subtle threads of connection the continuity requirement of Monism is satisfied, and our freedom is seen to be an intelligible factor within the unity of the Universe.

The problem of Freedom connects itself closely with the problem of moral evil. This evil, like the Kingdom of God lies within us, in our will, in our personality. It is there unmistakeably actual. But is it *necessary*? Is it essential to morality? Is it an indispensable adjunct of the moral consciousness and essential to its development? This is the question we propose to consider.

It will presumably be admitted that the *temptation* to do wrong is requisite for the shaping and testing of a good character. But if this is so, then, since Temptation implies a tempter, the question may well be raised whether the tempter, in the form of an evil impulse, is not in itself an evil, and a necessary evil. To admit the necessity, the moral necessity of temptation, it may be said, is to admit by implication the necessity of evil. It has been argued that the possibilities of evil which tempt us in temptation are themselves evil things. "We know them to be evil through their effects on character when we act from them. And when we adopt them in our volition we do not *make* them evil—we just bring out their own real evil nature" Thus argues Professor Jacks ("The Enquirer"). But this does not convince me. If a possibility of evil is itself an evil, then, on the self-same grounds *a possibility of not-evil is not-evil*. But, if freedom is to be intelligible, a possibility of not-evil is also at the same time a possibility of evil, and this possibility of evil, we are told, is itself an evil, so that *a possibility of not-evils is evil*. It would therefore follow that the possibility of what is not evil is both evil and not evil, and we are landed in self-contradiction.

We take it then that the possibilities of evil which tempt us in temptation are not themselves evils. But suppose now that our objector shifts his ground, and avoiding all reference to possibilities, i.e., to realities which are significant only in relation to the will, turns to impulses as they exist and enact themselves independently altogether of volitional control, and suppose that he maintains that our human nature is subject to malignant impulses, actualities whose nature is evil, and that these may come to the surface when the will is napping, and so work their havoc in the world, what are we to say? We would, I think, readily admit that there is evil in the universe which does not enter into it through the will but through passion, weakness or ignorance. But is such evil necessary, in the radical sense of that term? Does the presence of good in the world *imply* it, so that we cannot have the good without the evil? Surely not. In a universe where will is the dominating agency, all such evil passions before they can express themselves and prove spiritually destructive *may* be brought under the will's inhibitory control, and thereby transformed into mere possibilities of evil. We

may eventually be rid of them as actualities. In a word, if, and so far as, the will is free, no evil is necessary.

Let us turn now to the objector who maintains that good implies evil, and thereby makes it possible for us, if it so please us, to accept this world with its tangle of good and evil as the best of all possible worlds. If this position is consistently adhered to our objector will cling tenaciously to some residue of evil, for on his view the total disappearance of evil would bring with it the total disappearance of the good which implies it. It is indeed hard to believe that any one should hold it morally desirable that evil should never be rooted out of the world, and that, should it show signs of vanishing, our duty, as self-respecting moral warriors, must be to call it back in haste. When we pray, "Deliver us from evil," must we add the words under our breath "but not altogether"? And yet this is what we are logically condemned to do if we hold to the position that good implies evil.

The attempt may be made to soften this dictum, the dictum that "good implies evil" by the addendum that evil can be redeemed, redeemed through the power of good. On this view a certain amount of evil still remains indispensable, sufficient at any rate to stimulate the good to its best efforts—but the residue can be redeemed. This would make it possible for all unnecessary evil to be eliminated. But can we legitimately speak of redeeming evil? We speak of selfishness being redeemed through love. But do we here mean anything more than that the energies misspent in the service of self-absorption are won over by love and given a new direction. In this case it is these energies which are redeemed and not the evil. So when we speak of a man's redemption we mean, I take it, that his natural powers and energies are won over to the service of good, and re-directed under the guidance of the spirit. What is redeemed is the man's nature, and what it is redeemed from is the evil. What then becomes of the evil from which the natural man has been redeemed? On the view I have put forward it vanishes as evil altogether. Severed from the will, disadopted, nothing but its past history remains. If we say that it persists as a possibility of evil, tempting the will to readopt it, we must not forget that as a possibility of evil it is no longer an evil. The evil, in being disowned and discarded, with whatever reparation the disowning implies for its genuine fulfilment, is wholly extinguished. The will that brings evil into being can also make it cease to be by shaking itself free from the parasite. We cannot suppose that evil, dispossessed of its hold on the will, persists as a malignant though baffled actuality, a kind of Satanic Spirit, for, as Plato pointed out long ago, pure evil could not hold itself together. Evil things cohere only through

the good that is in them. Evil itself is a disorganisation, so that the disconnection from all that permits of being disorganised must be fatal to evil. If the devil exists at all, he cannot be wholly black. It is only in the abstract that he can be black all over.

Our argument so far has been to this effect, that in the activity of the human will we have a power which, in principle, can turn all events which come within its range into opportunities for good. Herein we have the miracle of will, for will is the greatest transmuting agency in the universe: its spiritual alchemy consists in this that it can arrest a tendency or an impulse which is heading towards some evil climax, transmute it into a possibility, and then reject it decisively as unfit for the building up of a moral order. In this transmuting power of the will—the power which lifts us above the brute compulsion of actuality, we have, it seems to me, the ultimate basis of the Kingdom of God within us. For until facts as they are can be seen in a fresh light as mere raw material for the structures of the spiritual world, and their value newly appraised from that standpoint, no fundamentally new construction is possible. The primary power of the will, the power of turning an actuality into a possibility, a brute fact into a problem and then into a task, is the power which lays the foundations of the spiritual temple in the world as we know it. Every brick of that temple has once been a real possibility, so that the whole spiritual structure down to its minutest details embodies and expresses our freedom, and would be meaningless without it.

No doubt, in the shaping of the Temple, powers are operative which transcend even the miracle of will. If possibility is the raw material and freedom the mason, the Architect is an Ultimate Obligation apart from whose operative presence and Ideal Pattern no spiritual structure would be thinkable. But from the viewpoint of the theme we have been considering, what I would emphasize is that since the spiritual world rests wholly upon a basis of possibilities, and every possibility is a possibility for good as well as for evil, there is no intrinsic necessity for the presence of any evil in the world of the Spirit. Good does not imply evil, and we may say of evil what Hegel said of Immediate Actuality: "Its vocation is to be consumed." (Hegel's *Logic*, tr. Wallace, p. 266).

We have been assuming up to this point that the alternative possibilities in an act of choice will be, relatively speaking, either good or evil. But in many cases, even where great moral issues are involved, the alternatives are both of them good and evil, good in certain respects and directions, evil in others. It may be impossible to make any choice that will not bring evil in its train. One may have to choose, like Antigone, between family piety and loyalty to

the State. A genuine dilemma offers a choice of two evils, the mitigating circumstance being that one is free to choose the lesser of the two.

And there is a further contingency to which the whole history of the tragic drama bears witness: A man may be excellent as a whole but his character may have a weak and vulnerable spot: it may be jealousy or ambition or hot temper; or he may not even have a weak spot at all but simply possess a temperament that puts him out of touch with his age and disqualifies him for meeting the duties of his station. And then circumstances may combine to strike blow upon blow on this weak and vulnerable spot until a desperate situation is created fatal to the buffeted individual and to many more who are dragged down in the downfall. Is there not evil here in an intense form, an evil that cannot be avoided, evil that is necessary, since the only road to improvement lies through a certain climax of dislocation. Briefly, though it may be true that evil is not necessary so long as its presence or absence depends on the choice of a free will, it may become necessary when freedom has to bow before fate or destiny.

These are genuine, old-time difficulties. The thesis of the first is that evil is necessary since choice may be between two evils. Let us consider this in the light of a special instance. A man may have to choose between telling a lie direct or betraying the life of his friend. Let us assume that each of these two alternatives is really an evil. All the chooser can do is to accept the lesser evil of the two. Evil is then necessary on that occasion and to that extent. But it does not follow that evil is thereby shown to be involved in the nature of things and to be something irremovable. This however is what the thesis "evil is necessary" substantially means. It means that evil must always be with us and that we cannot get rid of it. But if the lesser evil is always chosen there is nothing to show that we may not get rid of all evil in time.

But the assumption that each alternative is really an evil may very well be contested. If in all sincerity, I make up my mind that it is better to tell the lie roundly than to risk my friend's life, I have decided that this is the good course and that it would be bad to follow the other. The choice in last resort is between doing what one sincerely believes to be right and what one sincerely believes to be wrong. The lie told under these circumstances—we call it sometimes the "heroic" lie—would be a good and not an evil. If the will is sound, how can the action as such be evil?

We turn then to the second of the two contingencies, to the so-called tragic evil. On this point we have a most suggestive, and, I would add, convincing statement from Professor A. C. Bradley, in

the Introduction to his work on the Tragedies of Shakespeare, for we may surely take it that the problem of evil in Shakespearean tragedy faithfully reflects in its essential features the problem of evil in real life. The reading of these tragedies, according to Bradley, produces the persuasion that the ultimate power in the tragic world is *moral*, showing itself akin to good and alien from evil. Plain moral evil is seen to be at the root of the convulsions in which the tragedy essentially consists. "The love of Romeo and Juliet conducts them to death only because of the senseless hatred of their houses." So "the situation with which Hamlet has to deal has been formed by adultery and murder" (*id.* p. 34). "The inference is obvious," says Bradley. "If it is chiefly evil that violently disturbs the order of the world, this order cannot be friendly to evil or indifferent between evil and good, any more than a body which is convulsed by poison is friendly to it, or indifferent to the distinction between poison and food." (*id.* p. 35). Again the mere defects or imperfections of the hero (his irresolution, precipitancy, pride, etc.)—defects which in the wider sense of the word are evil, these "contribute decisively to the conflict and catastrophe." And the inference is again obvious, we read. The ultimate power which shows itself disturbed by this evil and reacts against it, must have a nature alien to it. Indeed its reaction is so vehement and relentless that it would seem to be bent on nothing short of good in perfection, and to be ruthless in its demand for it.

The tragic world thus appears as an order "which reacts through the necessity of its own "moral" nature both against attacks made upon it and against failure to conform to it. Tragedy on this view is the exhibition of that convulsive reaction." We are made to feel that tragic suffering arises from collision with "a moral power, a power akin to all that we admire and revere in the characters themselves" (*id.* p. 36).

If then the Moral Order is alien to evil and hostile to it, it cannot accept evil as necessary or as rooted in the nature of things. Once evil has appeared it must work itself out through suffering and through waste. Good must be sacrificed to get rid of it. But it is not necessary that it should appear, and it may be got rid of.

THE MACHINE AND THE WORKER.

By S. Wyatt, M.Sc. (Investigator to the Industrial Fatigue Research Board, London).

GENERAL CONSIDERATIONS.

IN recent years, the rapid growth and development of psychological knowledge has not only greatly enhanced its position as a science, but has also captivated public thought and imagination to an almost embarrassing extent. Sincere attempts have been made to apply its principles and laws to many aspects of human behaviour, and results of great importance have been obtained. The interesting and spectacular character of some of these has sometimes induced enthusiastic but uncritical individuals to boom the science in an unwarranted manner, with the result that its achievements often fall short of the expectations aroused. The application of psychology to medicine, education, and industry, has nevertheless yielded results of the utmost significance and importance, but the comparatively immature nature of the investigations in these fields must necessarily compel one to accept the findings with caution and reserve. The application of psychology to industry is perhaps the most recent of its developments, and much of the progress made in this direction is due to the impetus received during the war. The psychological problems of industrial life embrace a wide and varied field, but one of the most important is undoubtedly the relation between the machine and the worker. The increasing specialisation and sub-division of labour, together with the gradual replacement of manual labour by the machine, is creating a situation which demands special inquiry and consideration. The days of craft-skill are rapidly disappearing, and the worker, instead of being responsible for the production of the complete article, is now usually concerned with the repeated production of one of its parts. In most cases his dexterity and skill have been usurped by the machine, and his efforts are now largely limited to feeding or controlling these mechanical contrivances. Ultimate efficiency is still, however, largely dependent upon the man in charge of the machine, and it may be useful to consider some of the psychological aspects of work under these conditions.

DESIGN.

One of the most striking features which strikes the investigator of industrial conditions is the discrepancy between the design of the machine and the physical characteristics of the worker who controls it. All machines doing the same kind of work are usually of identical type, yet individual differences in physical characteristics are the most obvious features of human nature. From the mechan-

ical standpoint the machines may be perfect, but the designer often fails to realise their inconvenience and defects from the point of view of the worker.

The general contour of the machine in relation to the working position of the operative frequently presents glaring defects. The larger sized operatives on stamping-presses, for instance, often sit with legs twisted and bent, back arched, and body compressed into a space which would be conveniently filled by a worker of much smaller dimensions. Such an unnatural posture can be modified only within narrow limits, and although it may be tolerated for a time, it becomes uncomfortable and even painful after prolonged activity. Operatives working under such conditions are compelled to obtain relief by leaving the machine at frequent intervals, ostensibly to talk to another operative or to obtain some small article in connection with the process of production. Interruptions to productive activity are often due to the conditions imposed upon the operative by the machine, and bear a distinct relation to the imperfections in mechanical design.

The unsuitable design of the machine is consequently a contributory cause of much discomfort and reduced efficiency, which could be avoided by an adequate realisation of the physical characteristics of the worker. If the driving position in an automobile were as cramped as the worker's position on a machine, the makers would very quickly become bankrupt. Since adjustable seats are considered necessary in the construction of a car, in which the duration of a single journey is usually comparatively short, the application of similar underlying principles of comfort are much more necessary under the longer and more arduous conditions of activity which exist in industry. Industrial operatives do not possess the elastic and compressible properties of a gaseous body, as might be inferred from the design of some machines.

Another constructional defect in many machines is the unsuitable height of the working-plane. In machines of the same type the level at which most of the operations are performed is the same for all operatives, with the result that tall workers are compelled to bend and stoop to an unnecessary degree while the muscle-groups of short workers are unduly extended. Such enforced attitudes interfere with the facility and ease of movement, and prevent the maintenance of a high degree of efficiency. Wherever possible, the working-plane of the machine should be capable of adjustment, but when this is impracticable it should be constructed in accordance with the requirements of the taller operatives, and the working height of the shorter workers should be raised by means of standing-blocks or adjustable chairs.

Much improvement is also possible in connection with the accessibility of controls. In general, it is advisable to arrange these in a hemi-spherical plane with the operative as centre, but in many machines the worker is compelled to move or even to go round to the back of the machine in order to reach a lever or wheel.

Such interruptions interfere with the rhythm and swing of productive activity and are an important cause of lost time and decreased efficiency.

On some machines, such as those used in bobbin-winding in the textile industry, the operative is forced to stoop almost to floor level in order to pick up the yarn, and must stretch over and above the machine after removing the finished bobbins from the spindles. These movements are repeated hundreds of times in the course of a day, and although for a short time they may be useful as muscular exercises, their repeated performance is conducive to an unnecessary amount of strain and fatigue.

A further undesirable feature of some machines is the strength required to operate the controls. In many cases it is not only excessive, but often varies considerably in machines of the same type. It was found, for instance, that lace machines of identical structure and function showed a variation of 50lbs. in the strength required to operate the same control.* If one of the functions of the psychologist in industry is to reduce the expenditure of unnecessary energy, then such instances provide an obvious field for investigation and improvement. Laboratory experiments on repeated muscular activity, such as those provided by the ergograph and spring-balance, show unmistakably the unfavourable influence on working capacity. The manipulative requirements of some machines must also have similar effects, which are a direct and avoidable cause of reduced output.

The manipulation of controls may appear comparatively easy when considered in the designer's office or testing room, but their effect under the more exacting and arduous industrial conditions is seldom realised. Mechanical controls should be considered in relation to the various muscle-groups of the operator, so that the movements involved may be in harmony with physical and physiological principles.

The direction of movement required in the control of some machines is also an objectionable feature. This aspect of mechanical design appears to have received very little consideration, but an investigation on the relative ease and efficiency of movement in the three dimensions of space would undoubtedly reveal important dif-

* H. C. Weston: "A note on machine design in relation to the operative," 3rd Annual Report of the Industrial Fatigue Research Board.

ferences. In controlling a machine, it may be easier to pull towards the body rather than push away from it, and movements in a plane parallel to the front of the body are still more difficult. The question is certainly worthy of investigation, and should be carried out in conjunction with the determination of the habits of action most easily acquired.

In the construction of machines, the designer is naturally chiefly concerned with their mechanical and functional efficiency, and fails to appreciate their weaknesses from the standpoint of the operative. The principles governing the efficiency of the machine are usually thoroughly understood, and its behaviour can be predicted and controlled with the greatest accuracy. The human mechanism, on the other hand, is comparatively ignored, and seldom receives consideration. The functioning of the human mechanism is infinitely more delicate and wonderful than that of the most ingenious machine; muscular and nervous adjustments and co-ordinations are subject to definite laws, yet very few attempts are made to attain the conditions under which these laws operate most beneficially. An accurate knowledge of the mechanism of the human body is just as necessary as a perfect understanding of the machine, if the two are to function harmoniously and efficiently together. A closer contact between the industrial psychologist and the mechanical designer is accordingly desirable, and satisfactory mechanical conditions will never be obtained until such an arrangement exists.

SPEED.

Another important factor in the relation between the worker and the machine is the speed of the machine. Machines as a rule conform to two types; those in which the speed is under the control of the worker and those which run at a speed which is independent of her activities. Thus the mechanism of a stamping press may be released by the pressure of the foot on a pedal every time the article is placed in position to be punched, or it may be actuated 100 times a minute by mechanical means in which case the operative is expected to supply the machine with material to be punched at this fixed rate. Obviously the speed question enters into questions connected with machines of the latter type, and these will be the chief subject for discussion in this section of the article.

Machines of similar design, size, and function are usually set to run at the same fixed speed, and the operative is expected to keep pace with their inexorable demands. It is rather like expecting a long distance runner to keep pace with a motor-cycle running at a constant speed of 10 or 15 miles an hour. One of the most obvious traits of the worker, however, is the variability in working capacity throughout the day or week. The requirements of the machine

seem to assume that the bodily mechanisms of the operative are also able to function in a purely mechanical manner, and to ignore the fact that even if the human body consisted solely of nerves and muscles, the increased resistance to the passage of impulses produced by continued activity would cause a progressive decrease in the rate of working. The human organism, however, is much more than the sum of its anatomical parts, and variations in the rate of working caused by different psychological states may be quite as great as those produced by the more physiological conditions. Similar variations between different workers are equally noticeable, and yet each operative, if she is to conform to mechanical requirements, must perform the same cycle of movements with unvarying regularity throughout her industrial life.

If the speed of the machine were set to coincide with the slowest rate of working of the operative, the pace could be maintained with comparative ease, but in many cases, the mechanical speed is in excess of the average, or even the maximum rate of working of the operative. Only for very short periods can the worker cope with the maximum requirements of the machine. During a large proportion of the day (in some cases from 30 to 50 per cent.) she fails to supply the machine with the necessary material, a state of affairs which is obviously economically undesirable. Apart from the productive loss sustained, such enforced interruptions to continued activity interfere with the rhythmical movements of the operative, and prevent the appearance of the pleasant emotional state which usually accompanies rhythmical activity. Operatives who are the the unfortunate possessors of certain types of temperament become discouraged by their inability to keep pace with the machine, and the pleasure usually associated with successful performance is non-existent. Others become indifferent to the unattainable speed, and work at a rate which is in harmony with their abilities and inclinations. Occasionally, when the inclination to work at a slower rate occurs, operatives sometimes find that the higher mechanical speed acts as an inducement to greater activity, in much the same way that a pacer acts upon a walker or runner. The operation of such an incentive, however, appears to be of limited value, and, if unduly prolonged, may have undesirable effects.

In practice, the actual speed of some machines is in excess of the maximum rate of working of the operative, but the choice appears to be largely determined by chance. If it were set to coincide with the maximum rate of working of the operative, then for the greater part of the work-period she will be striving to keep pace with a rate which is only attainable with difficulty, and the activity in consequence will be comparatively fatiguing. If the speed of the

machine is equal to the average rate of working of the operative, then in the early stages of work she will be capable of exceeding the controlled speed, while in the latter part of the spell she will find it difficult to keep pace with it. If the speed is made equal to the slowest rate of working, then throughout the greater part of the spell she will be capable of greatly exceeding the prescribed rate. Thus whatever the speed of the machine, it cannot always be perfectly adapted to the natural rate of working of the operative, and at certain stages of work will decrease efficiency either directly by preventing the operative from exceeding the prescribed rate, or indirectly by producing increased strain and fatigue. Because of these objections, a machine whose speed is under the control of the operative is preferable, since it enables natural variations in working capacity to be adequately expressed, and, providing satisfactory incentives exist, will usually result in a higher output and efficiency than in cases of mechanically fixed speeds.

In addition to the existence of variations in the rate of working of the same individual, there are also the very large differences between different individuals. In this respect also, individually controlled speeds provide the necessary freedom and elasticity for the expression of these individual differences, and on the whole enable the work to be done with greater comfort and efficiency and with less fatigue. Where mechanically controlled speeds are unavoidable, They must be adapted to the optimum rate of working of each operative, if maximum efficiency and comfort are to be obtained. Under existing industrial conditions, the magnitude and importance of individual differences are insufficiently recognised, and although standardisation may be possible and desirable on the mechanical side, it cannot be rigidly applied to the workers.

UNIFORMITY.

A third effect imposed upon the worker by the machine is the simplification of the movements performed, and their increased regularity and uniformity. The thought and initiative formerly associated with craft skill are now relics of the past, and the repetitive nature of modern industrial work has given rise to new and important problems. It is maintained by many labour leaders and workers that modern industrial conditions make the behaviour of the operative as mechanical as the machine on which he works, that initiative and creative thought are deadened or destroyed, that pleasure and interest in work have entirely disappeared, that the general development of the worker is retarded and he is prevented from living and enjoying a full and complete life. Above all, it is said that the monotony of work is rapidly increasing—an assertion which

may be true, but which can only be proved or disproved by investigation along scientific lines.

As a general rule, work becomes interesting and satisfying when it provides a means of satisfying human desires and aspirations, and it is fairly certain that the objective conditions of modern industry are less satisfying in this respect than the days of increased variety in industrial tasks. Although the occasional visitor to a factory may be impressed by the apparent uniformity and monotony of the work, he often fails to realise that the workers sometimes find variety in evident uniformity. Some individuals undoubtedly enjoy continued repetition work of a mechanical nature, because it is free from responsibility and concentrated attention or thought. It is conducive to mental repose or passivity and provides opportunities for mind-wandering or thought directed upon pleasant subjects.

Other workers are prepared to tolerate monotonous conditions because they are sometimes accompanied by higher wages and shorter hours, and thereby provide the means and opportunity for activities and pleasures outside the factory. In many cases, there appears to be a gradual adaptation to the mechanical and monotonous conditions, which, like noise, come to be regarded as necessary features of industrial life.

The monotonous nature of mechanical work can often be alleviated by utilising devices which interrupt or change the continuous flow of uniform activity, or which modify the mental attitude by introducing new interests and incentives. Rest-pauses, for instance, have been found beneficial in this respect.* It has often been shown that in mechanically repeated operations, the prospect of several hours continuous activity has a depressing effect upon the operatives, and causes a considerable reduction in output particularly about the middle of the spell of work. The introduction of a suitable rest makes the work more bearable, and creates a different attitude towards the task. Frequently an increase in output is noticeable not only in the period following the pause, but also before the rest occurs. The latter effect is psychological, and is due to the modification in the mental attitude produced by the anticipated rest.

It has also been demonstrated that suitable changes in the form of activity will reduce the degree of monotony associated with continued repetition work.† In addition to producing a revival of interest, changes in the form of activity give relief by bringing into operation new neuro-muscular coordinations, and allowing the fatigued mechanisms time to recover. This explanation implies

* See, for instance, article on "Monotony," J. of the National Institute of Industrial Psy. Vol. II. No. 1.

† Report No. 26 of the Industrial Fatigue Research Board.

that the decrease in working activity is due to boredom and monotony, and that any fatigue produced is largely local, rather than general, but such conditions are very prevalent in industry. It is important to remember that the introduction of changes in activity will be most effective when they involve very different demands upon the mechanisms of the individual.

Other possibilities of decreasing the monotonous effects of mechanical work consist in the provision of interests and incentives to activity which are operative while the work is being performed. All those which appeal to the instincts of self-assertion and acquisition are useful in this respect, particular examples of which are the system of payment by results, profit-sharing schemes, and opportunities for transfer and promotion. Under existing industrial conditions, operatives seldom work to the limits of their capacity unless they feel that their efforts are suitably rewarded. A time rate guarantees a living wage, but a piece rate appeals to the desire for personal gain and a reward proportional to the effort expended. Operatives paid by piece rates are usually dimly conscious that every unit of output produced means so much money at the end of the week, and when the desire to earn as much as possible exists, it stimulates activity in moments of indifference and reduced effort. Bonuses or profit-sharing schemes based upon the annual profits of the firm usually have very little effect as an additional incentive to activity. Their rewards are too remote from the daily life of the worker to have any appreciable influence, and though they may cause an increase in output immediately before and after the time of distribution, they fail to affect the activities of the workers during the greater part of the year. The desire for promotion also forms a powerful incentive in industry, yet it is insufficiently utilised and often entirely repressed. The ambitious operative who realises that the opportunities for promotion are very remote will be discouraged and not likely to produce a high quality and quantity of output.

On the other hand, the existence of a graded system of promotion will do much to stimulate activity even when the work is otherwise uniform and dull. Progress induces self-respect and is an inducement to greater activity, and the introduction of schemes which appeal to deep-seated interests and desires will do much to neutralise the effects of mechanical work. Interests outside the factory also cast a glow over inside activities, and an operative who can look forward to an interesting evening or week-end will be in a more pleasurable frame of mind, and less inclined to be annoyed or depressed by monotonous work, than one whose life is always grey. In this respect, social activities and sports provided by the employers are particularly valuable.

An interesting problem for future investigation is the relation between intelligence and the ability to endure repetition work of a mechanical nature. Many people believe that the monotony associated with such work is most intense in the case of highly intelligent individuals. In some factories the employment managers accept for employment only those applicants who seem to possess just enough intelligence necessary for the work, and reject the more gifted in this respect. An investigation which would reveal the amount of intelligence required for different industrial tasks would be particularly valuable, so that vocational tests could be constructed accordingly.

The above considerations by no means exhaust the number of problems connected with the relation of the worker and the machine, but they serve to illustrate their nature and emphasise the importance of future research in this direction.

NOTES BY THE WAY.

No. 4.

Ethics of the Dust.

There is a notion, common among hobblederoys, that "experience" can be widened by a loss of self-control. Some of them will misbehave themselves just to "see life," or to "know the whole of life." And some half-sane or trashy-hearted writers of fuller age have erected this mess of vague thought into a kind of philosophy. Life they regard as an opportunity for collectorship, and they think of any new thing, noble or foul, that one does or sees as an addition to one's collection and an enrichment of one's personality; it makes one's life, they fancy, fuller and more complete, enlarges a man's knowledge of his own soul and helps him to gain a deeper insight into the heart and meaning of the whole world.

These ethics of the dust rest wholly on one blunder. They assume that every novel step which you take must needs increase your experience and not diminish it. Their algebra of experience recognises only the positive sign. They reckon with no *minus* experiences. They think of the clean boy who gives up his cleanness as if he had added something to his experiences and subtracted nothing; whereas at every loss of self-control, you make some exchange of the spacious lightsome experience of moral autonomy for the dark and narrow experience of moral helplessness; you always come off a net loser, your treasury of experience depleted on balance, your vision of life more or less blurred, your register of experience smudged, your faculty for delight perceptibly enfeebled. Burns had tried the thing out: he knew all about it when he wrote of uncontrol—it hardens all within and petrifies the feeling.

—C. E. Montague, in *The Right Place*.

BEHAVIOUR IN THE LIGHT OF MODERN BIOLOGICAL RESEARCH.

By R. Simmat, B.A., Research Scholar, Department of Psychology,
University of Sydney.

MAN has always tended to regard himself as a unified whole. He terms himself an individual. He says he is conscious of his own individuality. Whether Man is a unity from the psychological point of view is a much disputed question in both philosophical and psychological circles. The facts of hypnotisms, dreams, and mediumships would lead us to the conclusion that Man is not even a psychic unity. At present it is proposed to consider him from a different aspect. If some scrapings from the back of a human hand are placed on a slide and examined under the high power of a microscope they become resolved into a series of definite cells. If a section of bone is cut it may also be seen to consist of cells. If a section of muscle or cartilage be examined, it too proves to be composed of cells. The cell is the basic unit in the physical structure of Man. It might quite logically be contended that the cell is also the basic unit in the psychic structure of Man.

The entire human body is composed of cells. There are nerve cells, bone cells, connective cells, skin cells, and so on. To understand the behaviour of Man it is essential to consider him as an integration of cells—an integration of many million cells. There are over twelve million cells in the brain alone. Each cell must be conceived as having a certain amount of Vital Urge involved in it. By Vital Urge must be understood the energy which is the fundamental factor involved in all Life. It is an Urge of Life to maintain itself—a vital force without which matter cannot be conceived as living. It may be accepted as the fundamental Principle of Vitality that *only those molecular structures so integrated that the resulting phenomena are life processes may become living organisms, and only such molecular structures can reproduce living structures similar to themselves.* The force which maintains these molecular structures in a state of acting integration or Life, that is to say which enables them to exist as living cells, is what is implied in the concept of Vital Urge. Conceive this Vital Urge, involved in the many million cells of the human body integrated to form one great driving force within the organism. Conceive the individual as influenced by the combined Vital Urge involved in all these integrated cells. The external manifestations of the integrated Vital Urge constitute behaviour.

In the human individual the various cells are integrated into organs which have grown to be specially adapted for particular functions; there are the organs of sight, the organs of locomotion and the organs of digestion—these are specific integrations of cells. The organs co-ordinate with each other to promote the welfare of the entire organism. This co-ordination is achieved by a special type of integration—the integrative action of the nervous system. This is the result of a long process of adaptation of living matter to the needs of the organism. The needs are those involved in the relation of the organism, to its environment. The adaptation has taken place during past ages of evolution. The nervous system is composed of cells which have been specially adapted for the purpose of co-ordinating the Vital Urge of the various organs in such a way that the resulting behaviour will promote the welfare of the whole. If such an adaptation be not possible at any time the organism cannot continue to live, nor can it perpetuate its kind.

From a functional point of view there are two types of nerve, the voluntary and the involuntary. The voluntary nerves are under the control of the will. The involuntary nerves are not under the control of the will and are mainly concerned with actions of an automatic type, visceral activities, and with muscle tone.

Both the voluntary and the involuntary nervous systems are composed of afferent and efferent nerves; the afferent conveying an impulse to the central nervous system, the efferent conveying an impulse from the central nervous system.

There are three broad types of nerve co-ordination. The lowest occurs at the spinal level and the reactions at this stage are termed reflexes. The next highest is the sub-cortical. These reactions are the instinctive, and have often been more definitely localised as being co-ordinated in the cerebellum. The highest type of reaction results from reasoned judgment and involves finer co-ordination and integration in the cerebral cortex.

In the normal sensori-motor arc there are two structural types of nerve fibre. There is one medullated, this is the motile. The other is non-medullated, and is the sympathetic or tonic. If the finger is pricked with a pin the result is an almost immediate withdrawal of the part concerned. The whole process is involuntary, and the co-ordination does not take place in the upper cephalic regions. This may be easily proved by cutting the spinal cord of a frog at the posterior extremity of the head; the resulting material is known as the spinal animal; that is to say the nervous communication between the brain and the other regions has been severed. If this spinal animal is taken and some irritant acid applied to the surface of its abdomen the right hind limb will make efforts to remove the

irritation. If the right hind limb is held, then the left hind limb takes up the movement, and if both the hind limbs are held, the fore limbs will often move in an ineffective manner. This experiment is instructive in that it shows the possibilities of low level co-ordination within the spinal cord.

The typical reflex arc may be described as being constituted by a receptor, an afferent nerve fibre, co-ordination in the spinal cord, an efferent nerve fibre, and an effector organ with its attached muscle. There are other factors determining a reflex act. The late Professor Hunter in his work on the involuntary nervous system has shown the importance of the sympathetic nervous system. The sympathetic is that portion of the nervous system concerned with the maintenance of muscle tone and exists in intimate relation with the visceral organs. The sympathetic nerves make it possible for the normal individual to maintain a muscle in a certain state of contraction for long periods without continuously thinking about it. If there is some disturbance of the Sympathetic Nervous System the result may be complete paralysis of one or more organs. This state may be remedied by cutting the sympathetic nerves attached to that organ.

There are two kinds of muscle tone. The contractile tone of any muscle is determined by the Voluntary Nervous System; the plastic tone is determined by the Sympathetic Nervous System. Dr. Royle has now proved by a special technique of operative procedure that spastic paralysis occurs when there is over-emphasis of the plastic tone of any muscle. One patient was a soldier who had received a gunshot wound in the vertex of the skull. Since 1916 he had been paralysed in both legs. After an operation on the sympathetic nerves connected with the affected organs, severing them as close as possible to the sympathetic ganglion system which runs parallel to the spinal cord an immediate improvement was noticed. Four weeks after the subject could balance himself, and at the time Dr. Royle delivered the lecture describing the case he could stand up for nearly half an hour without any support.

Normally, if an individual wishes to move his leg, the muscles contract evenly and regularly. In abnormal cases the movement is often obstructed by a loss of flexibility in the muscles concerned. In spastic paralysis there is a failure of the principle of reciprocal innervation. To remedy this state the sympathetic nerves connected with the defective muscle must be severed.

An interesting aspect of nerve co-ordination may be found in what Pawlow has described as the conditioned reflex. If a dog is shown a piece of meat his mouth immediately begins to secrete saliva. It is possible to create these conditioned reflexes quite

easily. Suppose an experiment is carried out using a cat and a dog as material. Show the cat to the dog. The dog will normally bristle up and growl. At the moment the cat is shown to the dog say "cat" in a loud voice. If this process be repeated sufficiently a time will come when the mere mention of the word "cat" will cause the dog to bristle up and growl, although the cat may not be there at all. Pawlow gives a very wide meaning to the term conditioned reflex. His latest work on the conditioned reflex was given in an address to the American Association for the Advancement of Science. Pawlow trained white mice to come to their dinner at the sound of a bell. It took some two to three hundred lessons to teach them this. He then taught the young of these mice to do the same thing. They learnt their lesson after fewer trials. The third generation of mice required still fewer lessons. Pawlow claims that after he has bred several more generations of white mice it will not be necessary to teach them to come to the sound of the bell for their dinner. The new generations will come without being taught. This seems questionable and involves problems of such moment that the whole account should be treated very cautiously. In an experiment of this nature the test conditions must be very carefully prepared.

The difference between reflex and instinctive acts is in the degree of complexity. All types of reflex acts involve only a few nervous paths. This is the reason why the so-called conditioned reflex is not a true reflex. In the reflex act consciousness is not an important factor. The individual can react to a stimulus without consciously attaching any meaning to it. Consciousness succeeds and does not precede the reflex act. As instinctive acts become more and more separated from pure reflexes so is the emphasis on consciousness increased. To react instinctively the organism must attach some feeling to the stimulus. The instinct of flight is only aroused when the organism is in a situation that arouses some feeling of danger. The instinctive mechanism may be defined as an *inherited physically structural integration of cells typical of any species of organism, which, in a relation* to other vascular or visceral integrations, tends to produce conative resistance to a particular type of destructive moment in the reality peculiar to that organism. This process of relation initiates and results in various affects directly proportional to the conative resistance stimulated.* An instinctive act is a certain co-ordinated movement which has been determined primarily during the phylogenetic growth of the organism; its evolution has been determined by the principle that *only those reactions to experience which serve or do not hinder the con-*

*Primarily potential but secondarily modifiable by sense-experience.

tinued activity of the vital process tend to persist within any organism or species of organism as neural paths of low resistance—that is, as potentialities for similar reaction in the future. Those reactions which hinder or do not serve the continued activity of the vital process in any organism or species of organism will tend toward their destruction with the result that those reactions cannot persist, or be transmitted within the species and therefore will be eliminated.

An instinctive act involves feeling as the result of a situation. The situation has been recurrent during the evolution of the organism. It has necessitated certain reactions if the organism is to continue to live and to perpetuate its species. Only those organisms that felt in a particular way in these situations could react adequately. Those that did not feel in this way could not react adequately. They became eliminated by natural selection and so could not perpetuate their species. Gradually there became developed a species of organism such that all its members felt in particular ways in particular situations. As a result of this feeling peculiar to particular situations all reacted in a particular way to these situations. This is the process of the evolution of an instinct. The reaction adequate to a particular type of situation is the instinctive reaction. The feeling is the emotion. Emotion and instinct are inseparable. Each instinctive act is accompanied by its emotion. Each instinctive act is one that the organism must make in order that either its own welfare should be secured or that its species should be perpetuated. The motive force behind instinct is the Urge to Live which must be present in every living organism. Reflex action involves no emotion; an instinctive act does. Emotion is initiated physiologically and culminates psychologically.

Physiologically, emotion is said to be the result of amoeboid processes which develop from the neuroglia in the synapses. Psychologically, it is augmented by resistance to a conation, by some thwarting element in the environment of the organism. Emotion is the surging of the vital forces within the organism. The more the instinctive reaction is resisted the greater the emotion, the greater the Vital Urge concentrated in order that the appropriate reaction should take place.

Whereas reflex acts are due to spinal neural arcs, instinctive acts are co-ordinated in the cerebellum. Neurologically and psychologically the instinctive reaction is the more complicated. A brief summary of the instincts in the order of their development might be interesting. The earliest instincts to appear were doubtless those connected with nutrition. At first the organism would merely absorb food from the surrounding medium as does Amoeba, later more complicated processes would be evolved, including search for

appropriate food, pursuit of prey, and finally the adoption of various means for capturing the prey. Simultaneously, other instincts connected with defence would be developing. These would be at first passive and might be called instincts of structural defence. An example would be the oyster who builds a shell that the voracious fishes might not so easily devour him. Later the instincts of withdrawal or flight would appear, and finally there would be evolved the more active instinct of pugnacity. In addition there are the instincts connected with the care of young; these are the constructive, as when the bird builds a nest, and the maternal. Finally, there are the instincts connected with sex, and the social instincts such as what Macdougall calls primitive passive sympathy, and the gregarious instinct. Certain instincts are of disputable origin. Curiosity seems to be connected with the primitive tendency to seek food; repulsion might possibly be the result when curiosity is rewarded by something that is not pleasing; the instinct of self assertion is undoubtedly connected with pugnacity, that of submission with flight, while the acquisitive instinct might be traced to the simpler family instincts.

There are certain types of reaction closely allied to instincts which Macdougall has called "sensation reflexes." These would include such tendencies as scratching a spot that itches, blinking an eyelid or sneezing. It might be more convenient to call these pure reflexes. There are also other tendencies such as laughter and play, which really have an instinctive origin but which are too complicated to be fully considered here.

Monckton in his book, "Some Experiences of a New Guinea Resident Magistrate," gives an interesting account of what might be termed instinctive behaviour: he writes:—

" I noticed some rats going down to the edge of the reef—lank, hungry looking brutes they were, with pink, naked tails. I stopped on the point of throwing lumps of coral at them out of curiosity to see what the vermin meant to do at the sea. Rat after rat picked a flattish lump of coral, squatted on the edge and dangled his tail in the water; suddenly one rat gave a violent leap of about a yard, and as he landed I saw a crab clinging to his tail. Turning round the rat grabbed the crab, devoured it, and then returned to his stone; the while the other rats were repeating the same performance." (Chapter 6, page 46).

One cannot comment upon such an example. It is strangely reminiscent of the white mouse that got drowned in a pail of milk, whereupon the other mice formed a chain, and lowering themselves into the pail rescued their unfortunate comrade. As Wallace com-

telligent mice, such as these were, to have placed their comrade in a casket and held a burial service over his remains. It is quite easy to read more than there actually is into many actions of the lower animals.

The Hermit crab affords a well-known classical example of instinct. The account is from O'Brien's book, "From Mystic Isles of the South Seas," Chapter 18, pages 371-372.

" I seized one and behold, the inmate was walking on ten legs with the shell on his back, like a man carrying a dog-house. I attempted to pull him out of his lodging, and he was so firmly fastened to the interior by hooks on his belly that he held on until he was torn asunder. His abdomen is soft and pulpy without protecting plates, as have other crabs, and he survived only by his childhood custom of stealing a uni-valve abode, though he murdered the honest tenant. In one I saw the large pincher of the crab so drawn back as to form a door to the shell as perfect as the original. When he felt growing pains the Hermit Crab unhooked himself from his ceiling and migrated in search of a more commodious dwelling.

"Interesting as were these habits of the Cenobite crustacean, his keeping a policeman or two on guard on his roof, and moving them to his successive domiciles was more so. These policemen are anemones, and I saw Hermit crab shells with three or four on them, and one even in the mouth of the shell. When the anchorite was ready for a new shell he left his old one and examined the new ones acutely. Finding one to suit his expected growth, he entered it belly first, and transferred the anemone, by clawing and pulling loose its hold, to the outside of his chosen shell. How skilfully this was done may be judged by the fact that I could not get one free without tearing the cup-like base which fastened it. The anemone assisted in the operation by keeping its tentacles expanded, whereas it withdrew them if any foreign object came near. The stinging cells of the anemone prevent fishes from attacking the hermit, and that is the reason for his care of the parasite. It is the commensalism of the struggle for existence, learned not by the individual crab but by his race. Some crabs wield an anemone firmly grasped in each claw, the stinging nematocysts of the parasite warding off the devilish octopus, and the anemone having a share of the crab's meals and the pleasure of vicarious transportation. The anemone at the mouth of the shell keeps guard at the weakest spot of the hermit's armour."

The point is that the Hermit Crab is unprotected by any hard case of his own. In order that he should live and perpetuate his species he must find protection for himself in a shell. Those primitive hermit crabs that did not protect themselves by finding shells

did not live to perpetuate their species. Only those that sought and found shells survived. The tendency to seek shells became phylogenetically imprinted.

As evolution proceeded there came a stage when organisms began to live together in communities. This involved a great change. Organisms began to recognise members of their own group and to attack others who were not members of their group. It was through this stage that evolution proceeded to the ape. Meanwhile binocular vision had begun to supersede the panoramic vision of the lower vertebrates. Binocular vision involves perception of the third dimension as well as texture, distance and size to a lesser extent. Panoramic vision cannot perceive the third dimension. The typical panoramic vision is that of the fowl, the two fields of vision do not overlap, the beak intervenes.

Among the lower vertebrates there is a tendency to recognise things more by smell than by any other sense. When animals began to live in trees audition and sight necessarily became more specialised, and the tendency was to recognise things more and more by the eyes and the ears. As the vocal organs increased in function so was the emphasis placed on hearing. The organism recognised its prey by sight and its mate by hearing. This resulted in a lessening of the need for smelling things. The general effect of these changes was a tendency for the nose to diminish and for the eyes to approach each other. Hence began binocular vision in which the nose does not separate the two fields of vision. Neurologically, the process resulted in a proportional decrease in the cerebral zones for smell, and an increase in the zones for vision, hearing, and the motor zones involved in sound communication.

With the evolution of speech, the organism could proceed to the self-conscious stage. Man alone has progressed thus far. Through the medium of speech the individual is able to convey his wants concisely and to appreciate easily the wants of others. He no longer merely feels, he knows, he recognises, he discriminates. He becomes conscious of himself as an individual, he becomes conscious of others as individuals. He unifies his reactions, as far as he is able, into a consistency of behaviour; he strives after ideals; he formulates religions; conceives social systems and consciously strives to better his lot. In other words, he has reached the stage of intelligence.

Two criteria of intelligent behaviour may be set up. First, there is the capacity for utilising previous experience. Second, there is the self conscious factor—the consistency of reactions with some idea of behaviour. The first occurs when a monkey learns to

open his cage after a long series of trials and errors. The monkey is not completely intelligent in that he cannot refer his reactions to some idea of what behaviour should be.

Previous experience may be considered from two points of view. Firstly, previous experience may be that of the race—experiences persisting during past ages of evolution. It is these persistently recurring experiences that have determined instinctive behaviour. They are phylogenetic experiences. Memory of them is phylogenetic memory. This memory is not specific. It is more what is popularly known as intuition. It is the vague feeling that has been described.

The other type of experience is individual or ontogenetic. Memory of these experiences is ontogenetic memory. Intelligence and ontogenetic memory are directly proportional to each other. The more individual experiences are utilised the greater the intelligence. Experiences cannot be utilised if they cannot be remembered at the appropriate time.

Fundamentally memory is dependent upon purely neurological conditions; if the nerve fibres of the cortex are very plastic the conditions favour a good memory, if they are less plastic memory is impaired accordingly. Invariably the memory of the aged is not so effective as that of those younger. Memory is no better and no worse than the cortical nerve fibres which the individual possesses. The so-called improvements in memory are due to improved methods of systematizing the matter to be memorised. Memory implies retention firstly, and then recall at the appropriate time when the previous experience is required. Retention is the neurological factor; recall is more psychological. A situation initiates certain psychological processes. The idea of the situation calls up other ideas of similar situations by the process of association. The individual reacts to that situation in accordance with those ideas of previous situations, that is to say, in accordance with his previous experience. It is in proportion as the individual can adequately recall past experiences applicable to any situation that he may be considered as reacting intelligently in that situation.

Individual experience varies in behaviour value according to the stage of development to which any individual has progressed.

If a very young child feel hungry he will immediately go about satisfying his hunger need. This is the stage when the child rifles the cupboard irrespective of consequences. It is the instinctive stage in no way different from the behaviour of any lower organism. Later on if the parent places the good things out of its reach, it will endeavour to obtain them by climbing up to them; if it cannot get them by this means it will use a chair, and so on. This is the

trial and error stage that may be observed in the behaviour of the more intelligent animals, more especially monkeys. Later the child learns that certain needs must not be satisfied indiscriminately. It learns this because indiscriminate satisfaction brings about punishment. This shows a definite learning to repress needs and is a transitional stage. The child learns to repress certain needs until such time as satisfaction may be achieved without subsequent discomfort. The fourth stage is attained when the child becomes conscious of himself as an individual. Now he cannot satisfy certain of his needs because such a proceeding would be a disgrace to him as an individual among other individuals. He represses or modifies his needs because of social pressure. At first the social pressure is represented by the good opinion of his parents and those immediately about him. Later the social pressure is represented by society in general. It is at this stage that convention as a moral force has its greatest effect.

Gradually the developing individual has tended to integrate his early apparently formless behaviour into behaviour sets. Actually the early behaviour was not so formless as it seemed. It was really integrated into a quite definite behaviour set. This was integrated about self-preservation—the satisfaction of vital needs. The level was purely instinctive. This behaviour set soon became disintegrated by punishments meted out by critical parents and later by critical social systems. Soon the individual responses to situations tend to become integrated once more into numerous behaviour sets corresponding to the various social systems with which he comes into contact. These may be quite inconsistent with each other. The youth's behaviour set at home might be entirely different from that among his boon companions. The idea of what he should be in each of these social systems constitutes a self. The growing youth has an idea of what he should be at home and what he should be among his boon companions. These represent his home self and his school-boy self.*

In the lower stages of evolution physiological integration is the universal process. In the higher stages psychological integration is the universal process. As maturity approaches in the normal individual all these diverse incompatible behaviour sets tend to become integrated into the one behaviour set. The individual gradually comes to have a comprehensive idea of what he should do to be consistent. He comes to have only one self. Together with this one generalised idea of what he should do—this one self—he tends to have only one behaviour set. This behaviour set may be called

*This description follows Macdougall and to a lesser extent James.

his personality. By personality may be understood *that capacity possessed by the psychophysical individual for so adapting its reactions to situations that there ensues a satisfactory adjustment to one another of the needs of the individual, the idea of the possible reactions, and the requirements of reality.* The idea of the possible reactions is the Self. Personality then represents the equilibrium of the needs of the individual, the Self, and Reality. Character is the quality of personality.

The individual's idea of what he should be is based on memories of previous experience. Personality, or our behaviour set, is thus also based on memories of previous experiences. The individual does not remember all his past experiences. He only remembers certain of them. This may be reduced to the principle that *only those experiences compatible with a personality system tend to persist within the memory structure of that personality system as potentially active elements.* As soon as an experience becomes incompatible with a personality system it tends either to be modified or forgotten: that is, it no longer persists unaltered within the memory structure of that personality as a potentially active element. *If incompatible experiences are not modified to become compatible they are repressed to form another memory structure which may become the basis of another personality system.*

The highest stage of development is attained when the individual bases his idea of what he should be not on social praise or blame but on some ideal that he has formulated for himself. He may be compelled to adhere to this ideal at the expense of his social popularity. Martyrs are among such people. They are the extreme cases however. It is not usually necessary to become a martyr. Although the ideal should not be determined by social praise or blame, yet, to be a true ideal, it must contribute to social progress. It should transcend the vulgar attitude but nevertheless the individual should consider his own possible influence on vulgar conceptions. He should always endeavour to facilitate progress.

It has been said that a determinist should not preach. If the behaviour of the individual is determined by his physical structure it is useless to tell him what to do. It seems, however, possible to admit determinism and yet permit teaching. There are millions of possible combinations within the cerebral cortex. The aim of teaching is merely to substitute a better possible combination for one that would otherwise result in a lower order of behaviour.

Recognition of these facts in no way detracts from the nobility of Man. Nothing that lives is ignoble. Science does not deny, but substantiates the possibility of there being one fundamental principle determining all Life. Whether the principle be personi-

fied or not is a matter for individual preference. The actual principle is none the less real.

If Evolution teaches us no other lesson it should teach us our own debt to those who lived before us—to those who struggled in grim contest with the natural forces around them in order that the torch of Knowledge should be handed on to us. We might remember the Roman symbol of the weary messenger handing the torch on to his rested fellow slave who was to carry it on till he too became weary, when, in his turn, he gave it to another to carry on. We are a nearer approach to the goal of all Life than were our forebears who fought so stern a fight that they might give birth to those who ultimately gave birth to us. We are the mortal bearers of an immortal tradition of intellect. Whatever else our philosophy, let this doctrine find some place in it. Let us endeavour adequately to acquit ourselves by living a nobler life, by unselfishly striving to hand on, untarnished, the traditions which our ancestors have so worthily handed down to us.

NOTES BY THE WAY.

No. 5.

Spiritual Healing.

Surely the Healing Ministry of Christ is to be traced, not in the sporadic prodigies of faith-healing, which at best give results few and uncertain—even at Lourdes the cures are less than 5 per cent.—but in the majestic and unfaltering movement of Medical Science out of its confusing associations with magic and rudimentary religion into its present attitude, when it challenges with waxing confidence every malady which afflicts mankind, and brings its comfort on the wings of Christian charity to the poorest and most necessitous of the sick. It cannot be the duty of the Church, deliberately to return to the beliefs and methods of a primitive and superstitious past. Rather should the disciples of the Truth Incarnate follow the evident leading of the Spirit of Truth, support the patient labours of scientific men, welcome and apply the knowledge which they gain, and thus, in humble obedience to the Creator's Laws, rescue Humanity, so far as may be possible, from the physical distress, which shadow its earthly lot.

THE BASIS OF MORALITY (II.)

By J. McKellar Stewart, M.A., D.Phil., Hughes Professor
of Philosophy, University of Adelaide.

IN a previous article* I outlined Dr. McDougall's theory of the genesis of moral conduct and character. The central point round which the theory develops is that human volition of the highest moral type is continuous with that interplay of instinctive tendencies which we are accustomed to think of as constituting the mental conditions of animal behaviour. Continuity, in this connection, is taken to imply that the mental conditions of specifically moral conduct are but a more highly complex and more intimately organised system of the same tendencies which operate at a pre-moral stage of development. At the higher level, not only are these tendencies more perfectly organised, they are also re-directed to objects different in nature from those towards which they are natively set. The re-direction together with growth in complexity and degree of organisation are due mainly to two factors, the development of intelligence and the influence of the existing social environment. In my first article I raised the question whether the growth of intelligence, the power of framing abstract ideas, can be regarded as in itself sufficient to transform instinctive tendencies, originally non-moral, into activities of specifically moral sentiments. The purpose of the present article is to examine the part assigned by the theory in question to social environment in the genesis of moral life and character.

It will, I think, be generally admitted that in his treatment of this problem McDougall has made a valuable contribution to ethical theory. He has provided an analysis of the processes by which the individual enters into his social heritage. The thought of the interdependence between the individual and an objective system of social principles, traditions, and rules of conduct, is one with which students of ethics are familiar. We recall Green's statement: "Without society no persons; this is as true as that without persons . . . there could be no such society as we know . . . Just as it is through the action of society that the individual comes at once practically to conceive his personality and to conceive the same personality as belonging to others, so it is society that supplies all the higher content to this conception, all those objects of a man's personal interest, in living for which he lives for his own satisfaction, except such as are derived from the merely animal nature."† In expounding this thought McDougall has emphasised strongly, though not exclusively, the dependence of the individual upon his

*Sept., 1924.

†*Prolegmena to Ethics*, § 190.

social environment. In the Preface to *The Group Mind** he quotes with approval a central passage from the essay on "My Station and its Duties" in Bradley's *Ethical Studies*, the purport of the passage being that personal morality and political and social institutions cannot exist apart. And in the main body of the work referred to he develops the thesis of the great and necessary part played in human life by the group spirit. In a later work he writes: "Our enquiry concerns, not the isolated individual man (that pale abstraction with which psychology has too exclusively dealt) but the concrete men and women whose lives are but part of an organic whole, the life of organised society, from participation in which the individual acquires whatever value or importance he may have. We see that the worth of his purposes, of his ideals, and of his efforts to realise them, must be judged with reference to their effects upon the life of society."† Here the dependence of the individual upon society is exclusively emphasised; but some pages later what may be regarded as a complementary statement appears:—"The national organisation must be such as favours the highest development of personality; for, without such development of individuals the nation cannot thrive."‡ For the present, then, it may be assumed that the theory recognises the interdependence between the individual and society. It is not, however, in this recognition that McDougall's originality consists, but in the thorough-going analysis of the psychological processes by which the individual appropriates the fruits garnered in the progress of social life and lying ready to his hand in the form of institutions, traditions and rules of conduct.

While gratefully making this acknowledgment, I would still suggest that the theory, if it be taken as an account of the "genesis of moral conduct and character," is inadequate in certain essential respects. In proceeding to establish this suggestion I would emphasise the necessity of clearly defining the nature of the problem described as an account of the genesis of moral conduct and character. What we have to do is to make clear the conditions of such conduct and character, and care must be taken that the way in which we formulate the problem does not preclude the recognition of any of these conditions. In the theory before us the problem of the origin of the moral life is conceived to be that of explaining the interaction between particular minds on the one hand and the group or social mind on the other. The conditions elucidated are to be found within these two factors. It may be admitted that if we take account of the full nature of the individual mind and the social

*p. xi.

†*Ethics and Some Modern World Problems*. Pp. 127-128.

‡*Ethics and Some Modern World Problems*, p. 146.

structure we shall be in a position to discover the conditions of which we are in search. The question, then, is whether the theory which we are discussing does justice to the full nature of these factors.

A mind is defined as an organised system of interacting mental or psychical forces, and, though they are fundamentally akin, the individual mind is to be distinguished from the group mind. "When we speak of the individual mind or character we mean the organised system of mental or psychical forces which expresses itself in the behaviour and consciousness of the individual man."* Similarly, a group mind or social structure, "when it enjoys a long life and becomes highly organised acquires a structure and qualities which are largely independent of the qualities of the individuals who enter into its composition and take part for a brief time in its life. It becomes an organised system of forces which has a life of its own, tendencies of its own, a power of moulding all its component individuals and a power of perpetuating itself as a self-identical system, subject only to slow and gradual change."† Assuming the existence of the individual mind, possessing, to begin with, its inherited structure and instinctive processes and its rudimentary intelligence; assuming also the existence of a social mind in the sense described in the preceding quotation, the moralisation of the individual is to be explained by the moulding influence of the group mind. The process by which moral judgments come to be formed and moral character built has been analysed in *The Introduction to Social Psychology*; it has been further elaborated in *The Group Mind*. In a more recent work entitled *Ethics and some Modern World Problems*, this central thesis is insisted upon. It is affirmed that "nations are the bearers of culture and moral tradition," and it is held to be a fact that "each man attains to whatever morality he may display in virtue only of his coming under the influence of the moral tradition."‡ Taken in their context these statements are to be understood to mean that organised society, particularly the nation, of which an individual is a member, gives the individual, in Bradley's phrase, the life he does live and ought to live. The question is whether the theory takes into account all that is included in a mind or self and all that is included in a social structure.

We may work our way forward to an answer to this important question by a consideration of the analysis of volition which forms a part of the theory. While a distinction is drawn between conative and volitional effort, it is maintained that the effort of volition as

**The Group Mind*, p. 101.

†*Ibid.* p. 9.

‡*Ethics and Some Modern World Problems*, pp. 145 and 149.

compared with that of conation "involves no new principles of activity and energy, but only a more subtle and complex interplay of those impulses which actuate all animal behaviour and in which the ultimate mystery of mind and life resides."* Volitions are regarded as a particular class of conations, their distinguishing feature being the part played by impulses arising within the self-regarding sentiment. "The essential mark of volition," he writes, "that which distinguishes it from simple desire, or simple conflict of desires—is that the personality as a whole, or the central feature or nucleus of the personality, the man himself, or all that is regarded by himself and others as the most essential part of himself, is thrown upon the side of the weaker motive."† Again, "in the typical case of volition a man's self, in some peculiarly intimate sense of the word 'self,' is thrown upon the side of the motive that is made to prevail."‡ In discussing the psychological process by which the reinforcement of a particular desire by the personality as a whole takes place, he argues that it is not enough that the idea of the self shall be held in the focus of consciousness; the self must be the object of a sentiment. "The idea of the self, or self-consciousness, is able to play its great role in volition, only in virtue of the self-regarding sentiment, the system of emotional and conative dispositions that is organised about the idea of the self and is always brought into play to some extent when the idea of the self rises to the focus of consciousness."§ Volition assumes the moral form in the case of what is termed collective volition, the essence of which is "the motivation of the wills of all members of a group by impulses awakened within the common sentiment for the whole of which they are parts."**

In this account of volition emphasis falls upon the part played by the whole personality, but we have to ask what is this self or personality, the idea of which and the sentiment for which is regarded as the determining factor in the act of volition? The answer is that it is the self as identified with the traditions, institutions and rules of conduct of the individual's social circle. The idea of the self is mediated to the individual by his social setting, mirrored to the individual mind from a "gallery"; and the sentiment for this self is elicited by the regards, attitudes and actions of the "gallery" towards the object with which the individual identifies himself as well as towards him individually. "Moral advance and the development of volition consist . . . in the development of the self-

**Social Psychology*, p. 231.

†*Ibid.*, p. 240.

‡*Ibid.*, p. 246.

§*Social Psychology*, pp. 247-8.

***Group Mind*, p. 55.

regarding sentiment and in the improvement or refinement of the 'gallery' before which we display ourselves, the circle which is capable to invoke in us this impulse of self display; and this refinement may be continued until the 'gallery' becomes an ideal spectator or group of spectators, or, in the last resort, one's own critical self standing as the representative of such spectators."* McDougall does not lose sight of the fact that an individual may, as he expresses it, "stand apart from his group and from the whole of organised society, defying the general opinion and the forcibly expressed common sentiments, and saying, 'You are mistaken; this is right and I will do it. . . .'" Such cases may, however, he thinks, be brought within his principle of explanation. "The man who stands up against the prevailing public opinion and sentiment is the man who has found some higher court of appeal . . . This court, this tribunal, may be his particular moral hero or select group of heroes; it may be his dead mother, or his best friend; it may be what he believes to be the group consisting of the best men of all ages; it may be the Christian saints, or it may be God."† In every case, then, the idea of the self, its content, and the sentiment for the self are alike communicated to the individual by a social circle more or less select, more or less refined.

While it may be heartily admitted that in this account of volition much light is thrown on the processes by which individuals are socialised, and while it may be agreed that socialisation of some form is historically coincident with moral development, still as an account of moral volition the account is radically defective. The defect lies in the omission from the analysis of one essential condition of self-hood. What that condition is we shall presently see. In the meantime let us consider the way in which the problem is set: thus we shall see how the omission is to be explained. The analysis proceeds not from the stand-point of the moral self, but from that of the social environment. The consequence is that the self is interpreted as it may be conceived to be seen, or to add itself, through the eyes of an external spectator, and as it dances to the piping from a gallery. It makes no essential difference whether the spectator who calls the tune be the mass of mankind, a select group, an admired person or God. In every case alike the self sees itself through the eyes of another and is acted upon rather than active. Thus the whole development of the life of the self is represented as happening through the interplay of phenomena—instincts, sentiments, institutions, traditions and so on. The individual self is represented as a sort of psychological atom, a system of mental or psychological

* *Social Psychology*, p. 257.

† *Outline of Psychology*, p. 441.

forces. This unit or atom is conceived to be set in relation to units fundamentally similar in structure, and also in relation to a larger, more enduring, self-identical system of forces—a single continuously evolving organism—the group mind. The inevitable consequence of this way of picturing the self is that the conditions of the moral life are sought for in the inter-action of these entities. The individual mind or self is conceived to become moralised by the influence from without of other selves and the social organism. This one or that of its existing forces is modified, reinforced, and re-directed under the constraint of external forces, represented in idea, which gain their point of contact, so to speak, through such psychological phenomena as emotional induction and sympathetic contagion. The self as a whole does nothing—this or that ‘force’ is acted upon; and the mode of reaction is determined by the nature and strength of the social ‘force’ combined with the relative strength of the respective elements which constitute the native endowment of the individual. Further, whatever unity and organisation the system of forces which is believed to constitute the individual or self may attain, is in the last resort determined by the nature of the object to which the dominating force is re-directed under the influence of the self-identical social system. Thus the whole process is reduced to the interaction of phenomena.

I must confess that I am considerably perplexed as to what precisely is McDougall’s view of the relation between the individual and any social whole. In the Preface of *The Group Mind* he quotes approvingly Bradley’s view in this matter; in Chapter XI he rejects the view of Bosanquet, who himself has more than once acknowledged his indebtedness to Bradley, and who in regard to the subject in question has developed a theory which is substantially the same as Bradley’s; then in Chapter XX he propounds a view of the relation between the individual and the state which I am unable to differentiate in its main features from that which he previously attributed to Bosanquet and rejected. He seems to oscillate between an extreme individualism and a view according to which the individual is entirely subordinated to the social whole. One main tendency, however, reveals itself throughout the work, namely, to substantiate both the individual and the social whole and to set them over against one another. But it must be protested that if we thus substantiate the self and the social structure, all our subsequent thought is vitiated by the initial error of treating fictions, psychological abstractions, as if they were concrete realities. It may seem a hard saying that the self with which we are faced in McDougall’s theory is a psychological abstraction. For he has been forward amongst those who have recently been pleading for a more concrete

treatment of psychological problems. He tells us that "until the latter decades of the nineteenth century, psychology continued to concern itself almost exclusively with the mind of man conceived in an abstract fashion, not as the mind of any particular individual, but as the mind of a representative individual considered in abstraction from his social setting, as something given to our contemplation fully formed and complete"*; and he has insisted that we can understand the life of individuals only if we come to consider them in relation to the life of societies. The individual self, as the more concrete psychology for which McDougall pleads understands it, has existence only in relation to a whole of which it is a member. With this conception of the individual and the plea based upon it I am in hearty accord. But in developing his theory of the socialisation of the individual, the sound conception referred to seems to be lost sight of, and the argument proceeds as if the individual self as a system of impulses, or as a structural unit to the operation of which impulsive processes are due, existed, as it were, in its own right. This becomes more apparent if we approach the theory from the stand-point of the place and function of the social structure in the moralisation of the individual. It would not be quite true to say that a social whole is consistently regarded as having an existence independently of the individuals who enter into its composition. But it is I think, undoubtedly true that such a whole is conceived to have, as to its essential structure, such an independent existence. It has, we are told, a life of its own; it has tendencies of its own; it has a power of moulding all its component individuals and a power of perpetuating itself as a self-identical system. Surely the possession of such characteristics would constitute it a self-sustaining entity, completely independent of the individuals whom it moulds. In passing it may be observed how extremes meet: this view of the status of the social organism is almost identical with that expounded by Bosanquet, who points to the social fabric, the great structures in which spiritual achievement takes shape, e.g., knowledge, fine art, historical continuity of the constitution of a country; and he maintains that the continuous lines and articulated framework of such solid fabrics constitute the certain, intelligible and necessary thing in human life.† The importance of the truth at which these two thinkers have arrived by very different routes must not be allowed to blind us to the dangers which lurk in their statement of that truth. We frankly recognise that the individual is peculiarly dependent upon enduring in some sense super-individual structures such as those

**Group Mind*, p. 2.

†*Value and Destiny of the Individual*, pp. 53-4.

to which the theories before us point. It would, I think, be true to say that from these the individual derives his concrete nature. But if we are to be thorough-going in the development of the conception which McDougall has insisted upon in psychological investigation, we shall maintain that these structures have their reality only as they are sustained by the thought, enthusiasm, and effort of individual persons. In particular we shall resist any tendency to set the individual and such structures over against each other, to regard them as in any sense external to each other.

The tendency in the theory under consideration so to externalise the individual and the social structure results in the position that we are not furnished with any unifying bond between individuals and society which shall be internal to both and which shall explain at once the acceptance by the individual of the social tradition, insofar as he does volitionally accept it, and his critical attitude towards it. The social tradition does not come to the individual with its claims as something alien or external; he has the conviction that something within himself goes out, so to speak, to meet, to recognise and welcome these claims. That is one fact. Another is that most clearly in the case of the more highly evolved societies, the individual claims and exercises the right of criticising the existing social structure and tradition. It is these facts that the doctrine of the General Will was elaborated to explain. It is not my intention to enter here upon a discussion of this historic theory. I believe that the phrase, general will, has not been wisely chosen, for an act of will is always an act of a self or individual. At the same time it seems to me that the theory has emphasised an undeniable element or factor in the activity of the moral will. I refer to what has been historically known as the Ideal. This is not just one item of experience, one phenomenon, like an idea or an impulse or a sentiment; it is a true universal, pervasive, in moral experience, of such particular items. It is constitutive of the moral self, regulative in moral experience; its operative presence means rationality, humanity, the aspirations and efforts of the specifically human being. It is translated by thought into principles, such translation appearing to be a necessary condition of its effective control and regulation of conduct. It is of supreme importance to observe that as in the case of the Ideal, so in the case of a principle, we are in the presence not of an idea merely, nor of an idea set, as it were, within a sentiment; we have here something unique, which cannot be better described than as a power giving birth to tendencies which restrain this or that instinctive impulse or desire; a power which permeates, transfigures and harmonises such impulses and desires. Its presence, as we have said, in the experience of

the individual gives rise to tendencies or impulses generically distinct from the tendencies or impulses of the instincts of recent psychological theory. Its tendencies bring into subjection, for their own ends, all the tendencies of these natural systems. Further, and this is a fact of outstanding significance, the power which I have spoken of as a principle leaps over the boundaries which separate self from self. These are boundaries, not barriers, and in overleaping them there is no need for the principle to destroy them. The same principle may function in the minds of two or any number of individuals, and yet respect the privacy, the boundedness of each; indeed the existence of boundaries means enrichment; for the mode of operation of the principle will differ in different cases according to the temperament, the natural endowment, the significant environment of the individual. Thus its operation means anything but routine and uniformity; it means inexhaustible differences. The purposes in which it actively defines itself are truly common purposes, but not in the sense that they assume precisely the same form in the different minds to which they are common. They are common in that they spring from the one source and move towards the one far end.

Principles thus understood play no part in McDougall's theory. Such principles only progressively express in thought and conduct the nature of the Ideal Right. It is true, as regards both thought and moral aspiration, that our reach always exceeds our grasp. But any account of the conditions of the moral life which omits to give them the central place is to be regarded as radically inadequate; it leaves out the elements which are internally constitutive of moral personality, internally constitutive also of a social whole.

In the course of experience the principles to which reference has been made are translated into social habits, rules of conduct, institutions, social traditions. One might say that they constitute the body which these principles, active in individual minds or spirits, fashion for themselves. However we may describe them, they represent the achievement of the human spirit in its essential social aspect. In them such achievement is consolidated, and thus they constitute the social environment of the individual. The individual may respond to this environment in the first instance by unreflectively following the rules of conduct, performing the modes of conduct which they prescribe; and, in so far as they faithfully embody the nature of the Ideal, he attains a form of moral life. This form of life is secondarily or derivatively moral and it is the form of life to which McDougall's attention is in the main, if not exclusively, directed. It may be admitted further that historically this unreflective response is a preliminary to actively and distinctively

spontaneous moral conduct. It will be remembered that Plato counselled the surrounding of youth with "fair sights and sounds," confident that "beauty, the effluence of fair works," would "meet the sense like a breeze, and insensibly draw the soul, even in childhood, into harmony with the beauty of Reason." Similarly in the more specifically ethical sphere, provided that the social habits, rules, institutions faithfully express ethical principles, "insensible" response to them on the part of the individual prepares him for the welcome of the ideal when later it shall define itself in reflective consciousness. When the latter stage is attained the individual participates in the spirit which vitalises his social environment, sympathetically appreciates the principles which are internal to that environment, which pervade and sustain it. Now he not only allows himself to be moulded by his environment, he also makes his personal contribution to its structure, shaping, sometimes reshaping it from within—his guiding motive the principles which have been operative in shaping that structure hitherto. He had passed from conventional to relatively independent moral life, from secondary to primary, from derivative to original.

What I have been concerned to emphasise in this necessarily short discussion is the universal factor in the moral self, and through moral selves in social wholes. The presence of this universal factor alone explains conformity to the requirements of the social whole when such conformity is other than externally constrained; it alone explains the critical attitude of the moral individual to the institutions and social habits which surround him. It cannot, without loss, be neglected in any attempt to set forth the conditions of morality. My criticism of McDougall's position is that this factor is consistently overlooked. It finds no place in his account of the development of the self-regarding sentiment. One looks for it in vain in his analysis of volition, individual or collective. The idea of the group spirit is developed in independence of it. The result is that self and social whole are merely cemented together; their vital unity remains, if not unrecognised, unexplained.

In conclusion, I desire to call attention to what seems the inability of McDougall to grasp the nature of the universal. This appears most prominently perhaps in his recent book, entitled *Ethics and Some Modern World Problems*, although it may also serve to explain what has (not, I think, too harshly) been described as his "parody of Bosanquet" in the eleventh chapter of the *Group Mind*.* In the later work on Ethics Kant's well-known formula: "So act as to treat humanity, whether in thine own person or in

*Muirhead: *Recent Criticism of the Idealist Theory of the General Will. Mind*, April, 1924, p. 175.

that of another, always as an end, never as a means" is presented in the form, "Treat no man as a means, but every man as an end in himself." This is an unpardonable distortion on the part of any one who claims a voice in matters of Ethical Theory. Taken in its context, it completely reverses Kant's teaching. It is another example of that apparent inability to which reference has been made. When we turn to consider the substance of the work before us, we find that its main argument is based upon a confusion as to what universality means. A contrast is drawn between universal and national systems of ethics, and it is maintained that these systems have historically been in conflict and still remain unreconciled. The thesis is worked out in an interesting way with a wealth of illustration. Limits of space forbid any attempt to follow the arguments here; I shall content myself with referring briefly to the conception of universality in ethics which controls the development of the theme. To put it shortly, universality is taken to imply uniformity, the elimination of differences. That this is so may be shown by reference to the treatment of Christian Ethics, which our author takes as an outstanding instance of universal ethics. The central precepts of this system are formulated as follows: "That we always turn the other cheek to the smiter; that we always and everywhere subordinate our own welfare, and that of those nearest us, to the welfare of those who are further from us; that we regard all men as created equal and as of equal value; that every man shall be treated only as an end in himself and never as a means; that all men have an equal share to all that is worth having."* The practice of such precepts would involve the neglect of such differences as exist amongst individuals and groups of individuals, and a dismal picture is drawn of the future of a world in which conduct became controlled by such teaching. I cannot resist quoting the passage in which McDougall condenses his argument in this connection: "The universal individualist ethics, carried to its logical conclusion, demands that the whole of mankind form one society, without national boundaries and without racial distinctions. And it requires that this vast society shall be organised on the principles of communism. All men shall share equally in the fruits of the earth and in the products of human thought and human labour. Suppose this state of affairs to be established and maintained, every man practising faithfully the principles of strict communism and of brotherly love, always postponing his own claims and interests to those of his fellow-men. If we make this impossible supposition, we shall see that in this earthly paradise there would prevail a differential repro-

duction-rate The prevalence throughout a brief period of such differential reproduction would exterminate all higher aspirations; it would produce throughout the world a population that would spend all its leisure jigging to the jolly strains of jazz-bands, gazing at sensational trivial 'movies,' and applauding the heroes of the milder forms of gladiatorial combat. After a brief space of time the Fatty Arbuckles, the Charlie Chaplins, the Babe Ruths, and the Queens of the Musical Revue would reign supreme as the beneficent dispensers of the preferred pleasures of the populace. Such would be the result of the universal practice of Universal Ethics."*

The hypothetical prediction thus expressed does not call for consideration here; neither is it in place to question whether the precepts referred to are central to, or even form part of, Christian Ethics. I have quoted both precepts and prediction solely with a view to bringing out the defective idea of universality which dominates the discussion. The universal is regarded as a leveller of differences, a remover of boundaries, a destroyer of particulars. This may be true of an abstraction; it is certainly not true of a universal. When we speak of a universal factor of the moral life, we mean that this factor is indispensable if morality is to exist at all. We do not mean that this is the only factor which enters into moral activity; on the contrary, its existence as an element in such activity is inextricably bound up with other elements, those of particularity, of which it is pervasive. Its operation as an agent in the moral life presupposes dispositions, variety of natural endowment, racial differences; far from requiring the elimination of these, its essential function is, by permeating them, to raise them to a higher level—the level of the spiritual life. In the performance of this its essential function it removes barriers, but it respects boundaries, the boundaries which differentiate individual from individual, community from community, race from race. That being so, it is an error either in theory or in practice to oppose Universal and National Ethics as *two systems of ethics*. There can be in the nature of the case only one system of ethics, since there are conditions which are indispensable and internal to the moral life wherever and whenever it is attained. These conditions are universal, and they become increasingly clear as insight grows into the objective spiritual reality which we are accustomed to call the Ideal.

**Ethics and Some Modern World Problems*, pp. 111-112.

DISCUSSION—DR. HALDANE'S RELIGION.

By Bernard Muscio, M.A., Professor of Philosophy,
University of Sydney.

In his interesting and valuable article in last December's issue of this Journal, Dr. J. S. Haldane states his view of the only possible religion compatible with science. This religion, although Dr. Haldane is unable to belong to any Christian church or to accept Christian Theology in any of its forms, is identified by him with "the essence of the Gospel which Jesus proclaimed" (p. 242). Two questions then naturally arise. (1) The first is whether or not Dr. Haldane's interpretation of the "essence" of Christianity is correct. This question I shall not discuss; but it may be said incidentally that an "essentialist" would be apparently the opposite of a "fundamentalist." (2) The second concerns the philosophical adequacy of Dr. Haldane's religion (independently of the question whether this religion is identical with the essence of Christianity or not). Upon this second question some remarks seem to be called for.

We have to ask, in the first place, what Dr. Haldane's religion is. He tells us that "The very basis of religion is the fact that this universe is a spiritual universe" (p. 242). Now an essential part (though presumably not the whole) of what Dr. Haldane means by this is that the "universe itself is with us in our struggle. To use the language of the Christian religion, God is in us and the persons and things around us" (p. 233). The idea thus expressed is repeated. "Just as we experience our interests . . . we also experience the fact that our surrounding universe is with us in the realisation of these interests.

. . . We find ourselves in fellowship with others and with Nature: we are not mere individuals in a foreign environment: our environment itself co-operates with us" (p. 237). "The great merits of Hippocrates" (the Greek medical genius) is said to have been this: he saw "that Nature, far from being indifferent to human interests, furthers them continuously To him Nature appeared as a healer and a sustainer of life—not as something indifferent to life" (p. 234). And it is argued that we rely upon Nature at every turn: it is Nature that assimilates our food for us, that "regulates" our breathing or excretory processes" (p. 237), and that performs the thousand and one other things that must be done if we are to live. Because of all this, the religious attitude towards Nature, God, the Universe (all three identified with one another) is possible, indeed, inevitable. Science shews that a beneficent healing principle governs our lives, and hence we may say, in religious language, that "God is in us all and everywhere around us" (p. 242).

The view indicated in the foregoing quotations is not unfamiliar; but, understood in Dr. Haldane's sense, it appears quite destitute of theoretic justification. My objection to it is that, like most views whose primary significance is intended to be practical, it depends upon

a biased selection of facts. There are doubtless facts which harmonise with this view; but there are others which do not—namely, all those facts falling under the head of evil.

Consider disease. In what way does disease "further our interests"? How is "the environment co-operating" with the man who finds himself—say at the age of 25—a victim of cancer? Or with those tens of thousands whom an earthquake sends to a sudden and horrible death? "Fellowship . . . with Nature"! "Nature . . . healer and sustainer of life"! Nature, no doubt, does assimilate our food for us (if we are not dyspeptic) and regulates our breathing (if we do not have phthisis); but its (or her or his) ministrations to our interests hardly operate "continuously." We drink milk and are nourished (as a rule); but was Nature asleep or away on a journey when we drank the water that gave us typhoid?

It is not possible even for Dr. Haldane to describe the situation (with his own selected facts chiefly in view) without denying the very position that is being maintained. The "universe itself is with us in our struggle" (we are told). "Struggle"? What have "we" to do with struggle if the "universe" is with us? Anything against which we had to struggle would be a part of the Universe, and, since the Universe is with us, this would be with us too. As there is nothing outside the Universe, the conception of struggle, with reference to human beings supposed to have the Universe on their side, is unintelligible. "Man and the universe" on one side, and something else on the other side, is an impossible, a chaotic, conception.

I do not deny that the facts of life are such that certain features of life may appropriately be described as a struggle. My point is that we cannot say *both* that life is a struggle *and* that the "universe" is with us; and that, if we say the former, the latter has strictly no meaning. Dr. Haldane speaks two languages—one that of dualism, the other that of monism. And these two languages simply cannot be spoken together. If the facts indicated by the word struggle are real, it is misleading to say that the universe is on our side. It could still be said, as religion has commonly said, that "God" is with us; but a distinction would then be implied between "God" and the "universe." Dr. Haldane makes no such distinction. Similarly, we might say that "Nature" is with us; but we should then have to distinguish between "Nature" and the "universe," and to determine, far more precisely than we do at present, what falls *within* Nature and what falls *without* Nature. We should, no doubt, put typhoid, cancer, leprosy, small-pox, phthisis, earthquakes, cyclones, snakes, scorpions, and bull-dog ants, for instance, outside Nature; we should say also that death at 80 is natural whereas death at 25 is not; and many other things, equally anthropocentric and arbitrary. Dr. Haldane himself, though inconsistently with his main contention, distinguishes between Nature and the universe, for he tells us that "Nature is always tending . . . to repel infection and other harmful influences" (p. 234). The universe

thus is admitted to contain harmful as well as beneficial influences—with reference, that is, to us. How then can it be said to be “with us in our struggle”?

It has sometimes been held that evil is illusion, and that if we could see it in proper perspective, we should realise that this is so. Dr. Haldane, however, adopts no such theory. For him physical disease (not to mention “moral disease”) is a real evil: there *are* “harmful influences” in the universe. It thus seems that part of the basis of his rational religion would have to be a distinction between God and the universe. But this would mean dualism, and as I understand Dr. Haldane's philosophy, it is utterly opposed to dualism. That philosophy is a monism, and also a special kind of monism—spiritual, not mechanical. “The world,” says Dr. Haldane, “is the manifestation of one God in spite of all superficial appearances” (p. 241). But with such a philosophy, all reference to “struggle” and “harmful influences” is out of place. Evil *is* illusion.

There is another aspect of the matter. When Dr. Haldane talks of the universe being with *us* he seems to neglect altogether the existence of differences and conflicts of human interests. This applies both to groups and to individuals. Dr. Haldane's religion “calls us” (among other things) to fight in our country's “just battles” (p. 243). It would thus appear that the universe is only with those of us who are in the right, fighting battles that are “just.” This complicates the position considerably and introduces dualism once more. In any case, the matter is complicated enough through the mere divergence of the interests of fighting and struggling groups. The universe is with “us,” I suppose Dr. Haldane to mean, as “the human race,” not with “us” as “this particular ethnological group” or “this political party.” That being so, it would be much simpler if human interests were perfectly harmonious. Conflict of desires and impulses within the one individual presents the same problem. Is the universe with an unscrupulous self-preservative instinct or only with socially-useful instincts?

Spinoza conceived the universe as “governed” by laws which have not in themselves the slightest regard for human interests and desires. This conception, it may be said, can no longer be retained in view of all those facts, even though they are not all the facts there are, which Dr. Haldane has chiefly in mind: such facts as that food (on the whole) does nourish us, and that some of us find ourselves “at home” in the world. But it is easy to exaggerate the significance of these facts. Since we are here—that is, those of us who are—possessing life and consciousness, those conditions must exist which allow of us being here: that is, our food *must* nourish us (more or less). Existence itself is wonderful enough; but given a particular kind of existence, there is nothing at all wonderful in the fact that there must have been the conditions necessary for that particular kind of existence. The mere fact that Nature supports our life—when it does—is no proof that Nature is “with us,” any more than the existence of the typhoid

bacillus is a proof that Nature wishes it to prosper and to have its interests satisfied. The principle of Dr. Haldane's argument would prove that the universe is on the side of anything whatever that exists. On what side will the universe be if and when the sun cools down?

Is not our eating of a chop when we wish to be nourished similar in principle to our applying a match to wood when we wish to cook the chop? In both cases we act so as to utilise natural law for *our own* purposes. The chop may cause ptomaine poisoning, and the fire may burn down the house. Before we can "apply" them, we have to learn the "laws" of physiology just as we have to learn the laws of chemistry and physics. But natural laws are not "operated" for man's interests, nor are they always in accord with man's interests. And the relevant facts here are so obvious that they do not need to be mentioned. In view of the primary significance of these facts, the question of their interpretation—whether they shall be called mechanical, vital, or spiritual—is of no practical, and therefore of no religious, consequence. Disease and earthquakes occur, with their toll of life, whether we call the universe mechanical or spiritual. And when one thinks of Keats and John Hunter, and of such as these, Dr. Haldane's religion appears as the religion of a recluse from life, and Spinoza's conception as the only possible conception.

REVIEWS

VIIIth INTERNATIONAL CONGRESS OF PSYCHOLOGY—PROCEEDINGS AND PAPERS. (Ed. by the President, Dr. C. S. Myers, Camb. Univ. Press. 1924. Price 12/6 net).

Held at Oxford from July 26th to August 2nd, 1923, this important Congress was, memorably enough, the first scientific gathering since 1914 at which representatives of former belligerents have met to discuss objective problems without prejudice. In spite of the successful co-operation which marked the assembly, it must have caused the President no little anxiety and made no small demands upon the tact and capacity for organisation for which he has become notable. Upon the result, Dr. Myers is to be congratulated, for these "Proceedings and Papers" are the most valuable contribution made to the literature of psychology for some time.

Those interested in the rather pressing problem of "Intelligence" will find a symposium upon "The Nature of General Intelligence and Ability." Dr. Godfrey H. Thompson defends a view opposed to the "General Factor" theory of Professor Spearman. Perhaps the most interesting of the three contributions to this symposium is that of Dr. L. L. Thurstone, who makes a very successful attempt to render the various grades of ideas in terms of the degree of incompleteness of anticipated experience. Professor Claparède is the other contributor. He would restrict the application of the term "General Intelligence" as used by Spearman.

There follows a scholarly paper by Professor Koehler on "The Problem of Form in Perception."

A contribution which will arouse great interest is that of Dr. G. Révész, "Experiments on Animal Space Perception." The dominance of optical stimuli in the pecking reflex of the hen is established experimentally. Hens cease to peck when darkness replaces illumination. Further they can only peck after they have aimed: it seems that a hen can have its beak in a bowl of grain and yet be unable to feed. This paper is a model of experimental procedure and contains many good things.

The interesting distinction between "protopathic" and epicritic" sensibility drawn by Head and Rivers, and the important conclusions inferred from it have been brought in question, as is known. Here Professor Boring of Harvard expresses himself critically in that regard. He and other American investigators did not find in fact this sharp division between two kinds of sensibility, one earlier and one later, the later one normally inhibiting the earlier. On the contrary, they found continuity in returning sensibility. Further, while Head and Rivers report that two points cannot be discriminated in "protopathic" sensibility, Boring's experiments indicate that there was no significant alteration of the two-point limen while sensitivity was returning.

In Dr. Georges Dwelshauvers' paper upon "The Objective Registration of Mental Imagery," one is surprised to read "Nous n'avons pas rencontré d'images musculaires." It would seem that what has been demonstrated here is the existence of unconscious movements objectively determined rather than the non-existence of muscular images. This goes to show that the objective method alone cannot give a full account of the facts.

A paper by Miss Ikin, Professor Pear, and Dr. Thouless gives the results obtained from applying the psycho-galvanic method to dream analysis. It is held that not all the association which arise during dream analysis are equally significant. The aim is to provide a means for showing which associations are significant, seeing that it cannot be assumed that significant associations will always reveal their significance to the subject by their emotional tone.

In a paper entitled "Does Progress in Educational and Social Science depend upon Progress in Psychology?" Dr. Keatinge finds that at least a close connection exists between certain relatively new problems of education and the more recent developments of psychology. Dr. Ballard in regard to the same subject says that "A study of modern developments in education and psychology reveals similar trends in both; such as a transfer of interest from the intellect to the emotions, from faculties to instincts, from the conscious to the unconscious. But a trend of this kind begins just as frequently on the educational as on the psychological side. In fact the more imperative needs of education not only force certain problems upon pure psychology, but in a large measure determine its line of development." He thinks that "the most hopeful contribution [of psychology to education] is that of mental measurement. It is not unlikely," he says, "that psychology will

prove of greater service in the examination hall than in the lecture-room: that it will improve testing more than it will improve teaching."

Professor Henri Piéron makes a very able analysis in his contribution upon "The Psychological Problems of the Perception of Time," and is followed by a very different yet interesting treatment of "The Judgment of Time in Sleep," by Miss Mary Sturt.

In spite of a certain verbiage, one approaches with respect for his wide experience, the summary by Dr. Morton Prince upon "A Biological Theory of Consciousness." One finds oneself agreeing with the genetic view that consciousness begins in sentience, passes through a consciousness which is not self-awareness to definite self-consciousness. It also seems true that in human consciousness all of these stages are to be found existing. Especially does he find this noticeable in abnormal conditions.

Dr. Thouless provides a paper on "The Psychology of the Contemplative Life," his purpose being "to present a psychological study of mystical development in different religions, and to find out how far an adequate account of this can be given in terms of current psychological conceptions." The Rev. Canon Streeter follows this with a paper on "Religion and Psycho-neurosis." He discusses the hypothesis "that man's idea of God is . . . a 'projection' upon the Universe of that passionate need for a parent's protection which he felt so often when a helpless and frightened child, continued or revived under the stress and strain of later life." The treatment of the subject is acute and sensible.

There is no questioning the interest with which psychologists watch for the results of neurological research. This interest will assure a welcome for the Symposium on "The Conception of Nervous and Mental Energy." Dr. Adrian's contribution is made wholly from the point of view of the physiologist. Dominated by the traditional conception of energy in physical science, he finds little use for the term "nervous energy" as distinct from nervous impulse. Dr. Head's paper is more that of the neurologist, and the neurologist with a good knowledge of psychology. His conception of "vigilance," or the state of high-grade physiological efficiency which, being reduced by lesion, debility, or toxæmia, drastically affects responses, seems highly suggestive for the psychology of behaviour. Otherwise useful automatisms are detrimentally affected by lowered vigilance. One cannot detail here all the important conceptions which he introduces and applies, but one does naturally wonder what place Dr. Head will find for the fact recently established by the late lamented Professor John Hunter, of Sydney, that impulses from the sympathetic nervous system have much to do with muscle tone. This fact must have far-reaching consequences for some of the problems discussed by Dr. Head in this paper. Contrary to Dr. Adrian, Dr. Myers, the third contributor to this symposium, will hold to the conception of "nervous energy," even though it be not directly measurable in terms of mass and velocity. Dr. Myers says: "What I wish to suggest is that there are two different

systems governing nervous and muscular activity—the one concerned in the development of muscular contractions, ungraded and susceptible of 'exhaustion,' the other concerned in the development of muscular posture and tone, graded and susceptible of 'adaptation.'” This view seems to have been confirmed by the surgical results obtained last year by Dr. Royle and the late Professor Hunter.

After a discussion of “The General Form of Mental Activity” by Dr. Sjoebing, there succeeds one by Dr. E. Mira Lopez, in which is announced the use, when measuring cardiovascular changes during mental work, of Pachon's more delicate recording process, the oscillographic method instead of the usual plethysmographic method.

The great French psychiatrist, Pierre Janet, who is said to have scored a personal triumph in the discussions at the Congress, contributes a paper upon “Psychic Asthenia and Atony.” Referring to the symposium on “Nervous and Mental Energy” he says: “Nos successeurs pourront probablement un jour exprimer par un chiffre l'énergie mental d'un homme, comme on determine son poids et sa taille.” He then proceeds to discuss the question of mental energy from the pathological point of view.

C. H. Griffiths and W. B. Pillsbury give an account of “An Experiment on Indirect Measures of Fatigue.” They “chose for test three widely different functions: blood pressure, steadiness of hand, and the attention wave.”

Dr. Drever and Dr. Ernest Jones contribute separate discussions of the vexed question of “The Classification of the Instincts.” Dr. Drever rejects the popular biological division of instincts into the three groups of ego, sex, and herd instincts, dismissing it as too alluring. He advocates the use rather of psychological principles of classification. These are for him three and are as follow: (1) relative specificity of evoking stimulus and resulting response, (2) origination and termination of impulsion within the sphere of the affective or without, (3) relation to emotion. Dr. Ernest Jones, as might be expected, defends the Freudian grouping of sexual and ego instincts.

Dr. MacCurdy, discussing “Instincts and Images” suggests that the so-called unconscious processes “consist fundamentally in successions of images constituting the freest of all possible associations.”

It is interesting to note that, while many hypnotists find “passes” quite unnecessary, Dr. Alritz considering “The Psychological Importance of Hypnotism,” says that “downward passes lower the sensibility, upward ones heighten it.” Further, he finds some substances “transparent” to the influence of passes, others “opaque” to that influence.

Dr. Karl Abraham, in discussing “Early Infantile Thinking,” emphasises the valuable consideration of the marked subjective character of early thinking and the entire absence of critical, evaluating thought.

On the other hand, Dr. Adler, in his paper on “Advances in Individual Psychology” shows equally cogently the effect upon the individual's psychology of early nurture, which induces a sense of super-

larity which the individual cannot maintain, or a sense of inferiority which he cannot tolerate. "Das Kind findet in seinen ersten Jahren die Schablone fuer seine Stellungnahme zum Leben."

Mr. F. C. Bartlett, author of "Psychology and Primitive Culture," shows in his contribution upon "Symbolism in Folk Lore" the same care in exposition as marked the treatment there.

In "vocational selection" the man is chosen for the job, in "vocational guidance," on the other hand, the job is chosen for the man. Dr. Otto Lipmann, Dr. Cyril Burt, and Dr. L. L. Thurstone contribute to a symposium upon "The Principles of Vocational Guidance." One regrets, indeed, being unable to give the substance of these valuable papers; the reader of this review will do well to purchase a copy of the "Proceedings" for himself in order to have the contributions in full. Dr. Moede presents "The Present Position of the Vocational Test in Germany," Dr. G. Van Wayenburg contributes "Observations on Manual Dexterity," and Dr. J. M. Lahy gives an account of "An Experimental Inquiry into the Stroke of the Typist."

Other papers are those by Professor Henscher "On Sensations, Perceptions and Conceptions from an Anatomico-clinical Point of View"; by Professor Koffka on "New Experiments in the Perception of Movement"; by Henry Binns and H. S. Raper on "A Comparison of Visual and Tactile Judgment in Individuals of Different Ages and Training"; and by E. M. von Hornbostel on "Psychophysiology of Monotic and Diotic Hearing."

Not the least interesting and valuable of the contributions to these "Proceedings" was the sermon delivered on the Sunday morning during the Congress by Canon E. W. Barnes in Christ Church Cathedral. The subject was "Psychology and Religion," and it was this enlightened and liberal discourse which first came to hand here through the medium of the Press. Canon Barnes is already well known to Australian readers for the courageous and sturdy quality of his thought: for them especially this sermon will make good reading. I shall close by quoting two sentences from his discourse: "So far as I have studied your subject I find in it no unchallengable conclusions which would negative such beliefs. I find, moreover, much which promises to be of great use to religious teachers and leaders."

—H. Tasman Lovell.

THE FUNDAMENTALS OF PSYCHOLOGY. By W. B. Pillsbury. Revised edition. New York. 1923. The Macmillan Co. 12/- net.

THE FUNDAMENTALS OF VOCATIONAL PSYCHOLOGY. By Charles Griffiths. New York. 1924. The Macmillan Co. 12/- net.

The development of psychology as a science has been marked by the appearance of an increasingly large number of text-books both on the general principles of the science and on the application of these principles to all spheres of life. The truth of the scientific generalisations is tested by the application of them that man can make. It

must be admitted that many of these text-books present nothing new either in matter or presentation, but the two texts under review do not fall into this category.

Those who used the first edition of Prof. Pillsbury's book were attracted by the logical arrangement of his material, by his clarity and by his moderation. He dealt with the fundamentals of psychology and did not allow himself to be side-tracked into the discussion of many debatable points and unsettled problems. He aimed at giving the student an adequate and clear statement of the basal principles of general psychology and the wide use of his work as a text-book is the measure of his success. In the revised edition the same general features appear but, together with minor alterations in arrangement and expression, we find the addition of three new chapters dealing with aspects of the science that have assumed greater importance since the first edition was published in 1916: hereditary differences in individuals, methods of measuring intelligence, fatigue, sleep and dreams. The last three of these had been treated by the author in his "Essentials of Psychology," published in 1912.

In his method of approach the author avoids the strife of the "schools." He admits that his view-point varies with the subject matter: in sensation and perception he adopts the attitude of the structuralist, in action that of the behaviourist. As the preface of the first edition informed us "opposing theories are discussed only as they may illumine statements of fact or where they have great historical importance and then only if the problem is real and not settled." Teachers will find the work a very useful text-book; those who prefer to have their students approach the subject through action rather than through sensation can easily take the chapters in the order that will meet their needs.

The social conditions of the times, especially during and since the war, have directed attention to the importance of man in his social relations. The nineteenth century was the age of machinery, the twentieth promises to be the age of man. Psychology will have an important part to play in this age. Already the amount of investigation and research in connection with the part that human personality plays in the varied aspects of our social life is very large but the results of much of the work in these fields exists in a form not readily available to the student who desires to know how his knowledge of psychology may be made useful for him in the problems of his every-day life. Professor Griffiths has given guidance to students in these matters.

Every writer will select his illustrative material according to his training and interests; the important things are his point of view and his method of presentation. The author tells us that his "book is designed primarily to serve as a text-book for classes in vocational psychology. In the selection and presentation of material I have had in mind the fundamental problems of a psychological nature which confront both the employment manager and the vocational counsellor . . . The emphasis has been placed more on general principles, methods and technique, than on practical rules." The chapter headings

indicate clearly the scope of the book. The first two chapters deal with variability and correlation; then come two on physiognomy, followed by two on the interview and its psychological aspects. Other chapters deal with rating scales, supplementary tests and trade tests, and there are also sections dealing with tests of a more general type: strength and endurance; motor control, dexterity and speed; sensory and perceptual capacity; imagery and imagination; intelligence tests and their uses. The two concluding chapters are on instincts and character, and choosing a vocation.

Of course the material is not new; it is gathered from many different sources. But the arrangement is good, the language clear, and the examples illuminating. Each chapter is followed by a set of study questions and bibliography; in some fields a very useful historical sketch precedes the consideration of methods and results. Students who have mastered a general course in psychology and who desire to become acquainted with the methods of applying this knowledge to the problems arising in connection with the selection of the human material in industry will find this book an adequate and clear introduction to this difficult subject. They will realise, too, that only a beginning has been made and that a big field lies open to those who desire to take up research work in this subject.

—T. A. Hunter.

IDEALISM AS A PHILOSOPHICAL DOCTRINE. By R. F. Alfred Hoernlé, M.A., B.Sc., Professor of Philosophy, University of Witwatersrand, Johannesburg, South Africa. Hodder and Stoughton's Library of Philosophy and Religion. 1925. pp. ix., 189. 5/- net.

Messrs. Hodder and Stoughton's Library of Philosophy and Religion has done well to include a Manual on Idealism and to secure for its authorship so eminent a thinker as Professor Hoernlé. We have here presented in small scope a view of Idealism which unites in common defence of the Supremacy of Mind the two largely opposed tendencies of Spiritual Pluralism and of Absolutism. Spiritual Pluralism is the doctrine of those who, like James Ward and McTaggart follow Berkeley more or less closely in holding that the Universe is a Society of Spirits dependent upon a Supreme Spirit, namely God. Absolutism, as represented notably by Hegel and the Neo-Hegelians is characteristically Monistic, objective and logical in structure. The totality of things, the all-inclusive, is here the Absolute of which all finite individuals are but temporary manifestations or appearances. By bringing these two tendencies of Idealism within the compass of a single enquiry, our author has avoided one-sidedness of treatment, and it is pleasant to record the fair-mindedness with which varying shades of idealistic doctrine are discussed. The treatment has nevertheless a quite distinctive unity of its own, involving a certain limitation of outlook. It substitutes Berkeley for Descartes, as the father of Modern Idealism (p. 37), and even the "new type" of Idealism associated with the names of Kant and Hegel is discussed in its relations to the problems raised by Ber-

keley. It is within these limits and on the basis of Berkeley's significant insights that our author's exposition of the development of Idealism is conceived.

Berkeley's Idealism was essentially levelled against the materialism of his day, and the chief aim of his earlier writings was to substitute God for matter as the principle of explanation even for the physical world (p.58). God is the Supreme Spirit and through Nature reveals himself to human spirits who depend essentially upon him. This latter conviction, we read, "is undoubtedly the one which lay nearest to Berkeley's heart. It is the fundamental doctrine of Spiritual Pluralism. The famous "esse est percipi" doctrine remains none the less fundamental for Berkeleyan Idealism, and is excellently handled by our author. It is shown to be compatible with a sound philosophy of science, provided science is content to keep to its empirical basis and avoid all speculation and all metaphysical prying into the nature of matter. The thesis, as Berkeley intends it, is applicable only to sensations, and even a realist would admit that it is at any rate not a paradox to say that a colour *sensum* exists only when it is seen. The view that the doctrine reduces the being of concrete things to their being perceived is apt to involve a misconception. With Berkeley there are no concrete things in which sensory qualities inhere. A thing, with him, is no more than a collection of ideas of sense. It is not "a substantial somewhat which owns qualities" (p. 67). "There are colours but no coloured things." Colours exist only as objects of a perceiving mind, and in this relation, and not as inhering qualities, find their true substantial nexus. A further point is that ideas, for Berkeley are objects and not mental states or processes, so that Berkeley's theory is not properly a subjective but rather an objective Idealism. Moreover when Berkeley denies the existence of matter he is not denying the existence of physical things, but simply the theory which maintains that "what we perceive are impressions or sensations produced in our minds by the action upon them of material objects" (p. 71). According to Berkeley we do perceive real objects but their cause is not matter but God. All this, and much else in the analysis of Berkeley's Idealism is stated freshly and forcibly and will be found helpful to many readers.

The term "real," as our author points out, is ambiguous: it may stand either for the *existent* or for the *true* (p. 145). The Berkeleyan type of Idealism is concerned chiefly with the problem of existence, the Idealism according to Kant and Hegel chiefly with the real nature of that which exists (p. 146). With the earlier Berkeley at any rate the emphasis is on perception rather than thought, the notion of mental activity though stressed remains unanalysed, and it is hard to see how on Berkeley's premisses we can be aware of nature as an ordered whole or win an intelligible grasp of a natural law. Kant here fills the gap by his conception of Knowledge as essentially judgment and therefore essentially an act of ordering synthesis. Apart from these synthetic activities of mind none of Berkeley's "collections" could be

identified as things. They supply that criterion of consistency or systematic unity apart from which in last resort the true could not be distinguished from the false. It is synthetic judgment which first clearly reveals not only the logical structure of Nature, but the logical complexity of the reason itself. In the three Critiques we are offered a survey of the life of Reason. In every field—science, morality, aesthetic enjoyment, there is a systematic search for the principles or universals the presence of which constitutes “reason” in that field (p. 134). Thus Kant “redirected philosophy to the exploration of the universal principles operative in our spiritual experience in its several realms or branches—science, morality, art, religion”; though it was Hegel who actually extended Kant’s conception of Synthesis from the sphere of positive science to the whole realm of our experience, showing how the nature of the real works in and through our minds and gives all our human institutions—scientific, social, political, their spiritual structure and substantiality.

So far we have not come across the fundamental conception of Idealism as it develops itself in the work of Plato and the Neo-Platonists. The Platonic conception of an “Idea,” and the fact that for Plato Ideas are not only “essential natures,” but also “Ideals” (p. 29), these, together with other preliminary matters concerning Ideas and ideal theories, are discussed in an Introductory Chapter where Platonism figures briefly as a preliminary stage in the development of Idealism. It is probable that this somewhat scanty recognition of Plato’s importance as an Idealist will arouse more criticism than the effacement of Descartes by Berkeley, the more so as the important mystical development from Neo-Platonism which connects the Ideals of Truth, Beauty and Right with the attributes of God Himself and their presence in the soul as “the reality of God within us” is left wholly unconsidered. Due recognition is given to the presence in the human mind of a reality that expresses itself in and through it and determines all its thinking and choosing. But this inclusive reality, as the World, Universe, or Whole, the ultimate subject of every judgment, uses the individual’s subjective activity as its instrument, and it is it and not we who initiate, direct, choose or create. Possibly the most pregnant and contentious issue which this Manual presents to the reader is that between the reality of a personal individual and that of a superpersonal Absolute, and the reader will doubtless gather from this work of Prof. Hoernlé that the soundest and most developed view of Idealism is that of the Neo-Hegelian School with its recognition of the Absolute as the one source of all Spiritual initiative and efficiency. Let us consider the point more closely.

On p. 43, after bringing out the fact that Locke’s new “way of ideas,” cleared of entanglement with the theory of representative perception, has the great merit of bringing all objects within a single world as “objects of mind,” Prof. Hoernlé develops the further contention of many idealists that the “I think” is only one side of the truth, and “the world thinks in me” is the other side (p. 45), a view

which subsequently (p. 150) takes the form "our ideas are themselves facts," i.e., "what we perceive and think is not different from, but identical with the real world." Idea and fact are identical, and this identity is what we mean by Truth (p. 124). In proportion as the identity is more inclusive and consistent it is to that extent more true. Thought is not a purely subjective function possessing its own intrinsic necessities or directive ideals, but is "the control of mental process by the real object" (p. 171); it is the object of thought that determines our thinking (p. 44). Now this varying and repeated emphasis on the determinative influence of the Universe or Real World on all that we think or will implies a view of the "I" and the "I think" which has been criticized by personalists of different schools. Fact must be relevant fact and in this sense intimately linked to the purpose and viewpoint of the thinker, but this viewpoint and purpose is mine and not that of the world I seek to interpret. Thought is essentially "my thought," in the sense that the thinking which discovers the nature of reality is self-directed by aims, methods and ideals which animate the thinking and not the object to be understood. The object to be understood is *qua object* intelligible but not intelligent, and it is through his intelligibility that it is intrinsically related to mind. Now what is merely intelligible cannot do our thinking for us, though it can determine what the results of our thinking alone can be. Thus what controls our thinking is not in the first instance the real object but the thinking's own ideals and methods. These determine the whole structure and function of science and philosophy, though the nature we think about, precisely through being what it is and having a nature of its own, eventually cancels as inadequate any idea which does not grasp it in its whole complex entirety. These characteristic contentions of the Personalists (not necessarily Spiritual Idealists) though they may not penetrate to the ultimate root of the relation of subject to object in knowledge and reality have this merit at least, that they escape the desperate identification of idea and fact, as though facts could choose the viewpoints from which they are to be considered scientific, religious, etc. (cf. pp. 149, 150). And yet this rift among Idealists cannot be regarded as final. A way of promise and of future understanding between "Absolute" and "Personal" Idealists would seem to lie in a more thoroughgoing analysis of the superpersonal, and its concept than has yet been attempted. It is usually assumed by the Hegelian Absolutist that the God of religious experience must be personal, the Absolute Reality superpersonal. There is, however, much to be said for the thesis that the God of Religion, as the Source and Substance of the Principle of Good in all its forms, is superpersonal, and that such divinity, in relation at any rate, to the infinite needs of our deeper nature, admits of being rationally conceived. Still it is difficult to see how the fine logical armoury of Idealism which Hegelians and Neo-Hegelians have done so much to develop, can be effectively applied to this problem unless the presence of the divine in the human soul as the Ideal, is taken as the experiential starting-point for the

study of the superpersonal and the "I" of the Personalist accorded an ultimate reality in virtue of the intimate and intrinsic connection between personality and the Ideal. If this is done, the standpoint might be that of a Spiritual Pluralism, provided such Pluralism is not incompatible with a Monistic outlook or a belief in the Absolute, and does not repudiate the essential insight of the mystic.

The author does not profess to have given us a complete Manual of Idealism, but rather a chart to guide the student through the idealistic maze, and to stimulate him to further development and discovery. The chart is indeed a valuable one, contains many points of specific interest, e.g., a penetrating comparison of the Idealisms of Bradley and of Bosanquet, and should be particularly welcomed by students of History of Philosophy and of Metaphysics who are seeking their bearing in a difficult region. Its author has the rare gift of being at once an authority in his subject and of saying deep things in a simple and untechnical way. Like the author's recent volume on "Matter, Life, Mind and God," the present Manual on Idealism is well-adapted for tutorial class-discussions, and it is to be hoped that for these and other interests and purposes of the student of philosophy, the book will be widely and permanently serviceable.

—W. R. Boyce Gibson.

DIE PSYCHOLOGIE DER FRAUEN. Von G. Helmans. Karl Winter, Heidelberg. 1924. Pp. 300. Price 4 marks.

This interesting and suggestive study is based largely on questionnaire results. It is the fresh data they supply which have encouraged the author to tackle again the perplexing old problem: is there a fundamental psychical difference between man and woman, one that goes deeper than culture, and if so, wherein precisely does it consist? The author is scrupulously fair-minded. (1) He is not concerned with practical issues, such as the fitness of woman for study, or voting or holding public offices. (2) He holds that sex-differences do not imply differences in value. (3) He points out that his inquiry, being statistical in nature, deals only with averages. Though men are on the average taller than women, this does not exclude the possibility of a particular woman being much taller than a particular man. You cannot refute statistics by quoting particular cases. Much has been said and written about women which simply reflects the particular experience of an individual so that, as J. S. Mill maintains: "One can, to an almost laughable degree, infer what a man's wife is like from his opinions about women in general." The questionnaire method makes it possible to bring a large number of cases under observation. The results of two such enquiries are printed at the end of this volume, dealing with some thousands of cases. There may be errors on the part of the individual doctors and teachers who have here recorded the results of their observations, and yet, taken as a whole, these results will still have value. It is not that many wrongs produce a right, but rather that the sources of error cancel each other, and there is always the pressure of the facts

themselves operating in favour of a right decision. There must, however, be sufficient material to work upon, and it is the scantiness of existing material which prompted the author to undertake the very elaborate questionnaires given in the supplement. The questions in the first one cover all aspects of the psychical life, from the possession of such qualities as tolerance, constancy and unselfishness to differences of political outlook, love of sport and the tendency to put off answering letters. It will be obvious that to frame questions unambiguously is a work of some skill, and to interpret the answers rightly needs both skill and fairmindedness. The author has sought to eliminate all ascertainable causes of error. He compares the reportsheets filled up by men with those filled up by women, and where there are discrepancies, he seeks to ascertain the cause of them. It is interesting to find that, in the main, men and women observers give very similar results. The questionnaire method is not, however, employed to the exclusion of all else. There is frequent reference to experimental tests, official statistics of crime and disease, biography, proverbs—which register the experience of many generations,—and the opinions of individuals derived from their own particular experience. These last, though inferior in scientific value, certainly add interest and variety to the treatment.

The main idea of the book is that it is woman's greater capacity for emotion which is the key to all subsidiary differences in feeling, perception, intelligence and action. It is true that we find the emotional and the unemotional type both in women and in men. An unemotional woman is much rarer the average man than is the emotional, sensitive artist-member of his own sex. But there are more emotional women than emotional men. There is perhaps no other point on which different investigators are so generally agreed. The answers reported in the questionnaires all favour the assumption. Mental disturbances of emotional origin are much more common in women than in men. And all the outwards signs of emotion are much more strongly marked among women. In this connexion, there is an interesting reference to Lombroso and the Italian School, who, in the matter of pain-sensitiveness, object to arguing from these outward signs. They declare that women really feel pain less intensely than men and that the prevalent opposite belief is due to mistaking expression of pain for pain itself. Women, in short, have not greater sensibility but only greater "irritability." The author points out that, curiously enough, they urge, in support of this contention, that women stand pain better than men, do not faint nearly so often in surgical operations, are superior as sick-nurses and so on. They appear to have no objection to inferring a weaker sensibility from a weaker manifestation, though they will not allow a stronger manifestation to be taken as evidence for a stronger sensibility. This inconsistency vitiates Lombroso's argument. The author does not touch upon his experiments. But he defines his attitude towards experimental tests in other parts of the book. He hopes much from them in the future. When properly organ-

ised they should be a much better weapon than the questionnaire. But at present there is not enough agreement between experimenters as to the methods they use and the kind of people they test. He notes more than once that women do not make good subjects for threshold-experiments (Cf. pp. 84-85).

Granting, then, that woman feels more intensely than man, what results should we expect to find? In the first place, *a narrowing of the field of consciousness*. What is gained in intensity is lost in scope. It is interesting to note that Janet has defined hysterical anaesthesia as an abnormal narrowing of the field of consciousness, and hysteria is "*la gigantessa della femminilità*." Again and again the author finds here the clue to certain traits noted in ordinary life or brought out in the answers to the questionnaires. Why is it that women are "more suggestible," "easier to persuade," and again "inaccessible to the most convincing argument"? His answer is that the emotional type is always more suggestible, but the suggestion may come from within or from without. In either case it will be so strongly tinged with feeling-tone as to take exclusive possession of the mind. Thus women may be expected to vary more, to be more "unaccountable," more full of surprises. On a long walk she will often go on to a certain point and then collapse suddenly while the man gets tired more gradually. In politics, the report-sheets (p. 206) show that women swing to extremes: they incline to be either conservative or radical. There are fewer moderates. In sex-relationships it is with woman far more than with man a case of "all or nothing." She is not so capable of a divided allegiance. If she breaks her troth, she breaks it completely. Even in crime, once started, she is harder to reform. Instances can be multiplied, but there is one particular question in this connexion which the author discusses in an interesting way (pp. 150-153). Why, he asks, has woman not done more in the realm of creative Art? There is so much that is in common between the artist and the woman. To feel intensely is a condition of artistic creation. In this domain, woman's output might have been expected to equal man's, yet, as Rubenstein points out she has never written a cradle-song or a love-duo that can compare with those produced by men. The author suggests that this is because artistic creation involves not merely strong feeling, but the capacity to look at that feeling objectively. If it occupies the whole field of consciousness then it cannot find artistic expression. You live your poetry instead of writing it. In arts such as the theatrical art where this duplication of the self is not necessary, where you simply have to merge yourself in the character you are representing, women have at all times competed successfully with men.

This may be true, but it still leaves us wondering why men of emotional type should find it easier than women to objectify their emotion. Perhaps here the author might well supplement his explanation by reference to the other main difference which he finds between the sexes: *viz., the greater concreteness of woman's way of thinking*. She dislikes analysing,—tearing to pieces,—the objects she loves as

wholes. Pages 135-156, which deal with the intelligence, are extremely interesting and suggestive. Woman is more interested in concrete situations than in abstract ideas, or as Mill puts it, she "seldom runs wild after an abstraction." As a rule she is better at languages than at mathematics. When she takes to philosophy, her favourite philosophers are generally the less abstract thinkers (Plato, Schopenhauer, M. Aurelius, Epictetus, Renan). As Lotze says, "the knowledge and will of men aim at generality, those of women at completeness." They have not men's "profound reverence for general principles" and closely connected with this is "their well-known unjudicial character," their scantier reverence for law.

It is this decided preference for concreteness which to the author's mind accounts for woman's comparatively small scientific output even where there has been equality of opportunity. There are fewer women who are content to immerse themselves in the cold bath of scientific abstraction. Their soul is not in it. They have great capacity for the conscientious acquisition of knowledge. Their examination record is better (statistics are given on p. 123), but they lack the scientific passion which is necessary for creative discovery, and love is a thing which cannot be forced. "There is perhaps," says Lotze, "no object which a woman's mind could not understand, but there are many things in which women never learn to be interested." And the author quotes an instance reported by Winkler of a gifted young woman who gave up a much-coveted post because, she said, "my intellect found satisfaction in it, but not my heart." Science and art for women are something in their lives, but not life itself. They are ready to give them up for love, whereas a man, faced with the alternative, would at least hesitate. The fact that women so often do give them up for love thins very considerably the ranks of those from whom first-class work might be expected. And the author might have added that even the professional woman has usually far more family calls upon her time than the man who is doing corresponding work. But being a man he probably didn't know.

There are many other points of interest such as the greater activity of the Unconscious in woman's mental activity. This he connects with her dislike of analytic abstractions. Her intelligence is more intuitive and less rationalistic. "On ne nous apprend rien: nous devinons tout." He again crosses swords with Lombroso in his attempt to class woman's intuition together with animal instinct (p. 174). Woman's way is not inferior to man's way: it is simply different. Her intelligence, plastic and adaptable, fits itself to the endlessly complicated curve of life, instead of proceeding by straight lines and angles. She is more capable of dealing with the individual: her charity seeks rather the personal than the institutional outlet (p. 183). Her genius is displayed preeminently in the home, for, to invert the Bible phrase, "where your heart is, there will your treasure be."

The last chapter, concerning the *origin* of psychical differences, is perhaps the least full and satisfactory in the book. It seems strange

that motherhood should not be more strongly emphasised. It is mentioned, but only as one factor among others. A good many of the qualities which the author has singled out as most characteristic of women seem to be more closely bound up with motherhood than with the more general term of "emotionality." Is it not,—quite specifically,—the maternal instinct which gives woman her preeminence in sick-nursing or the care of young children? The author couples motherhood with woman's subjection to man as among those social conditions which, operating through long ages, have left their imprint upon her soul. But surely these two factors are not on the same plane of importance. The one may indeed be just a cultural condition. Among civilised people it has almost ceased to operate even now. But Motherhood is something fundamental, wrought into the inmost fibre of woman's being, responsible for many of her defects as well as of her virtues. Like sex itself it "lies deeper than culture."

This does not mean that it is incapable of development. There are two ways, the author points out, in which it may be profoundly modified. One is through sexual selection which may be expected to operate more freely in the future than it has done in the past. The other is through the influences of social conditions, such as education. It seems however, to the Reviewer, that Motherhood, however repressed, transformed or sublimated, will always be the key to the proper understanding of women.

—Lucy J. Gibson.

SCIENTIFIC PAPERS, mainly on Electrodynamics and Radiation.

By the late S. B. McLaren. Prepared for publication by Professor H. H. Hassé, Professor T. H. Havelock, F.R.S., Dr. J. W. Nicholson, F.R.S., and Sir J. Larmor, F.R.S. Camb. Univ. Press. 1925. Price, 8/6 net.

This work is not a reprint of McLaren's published scientific papers, but a description of his contributions to mathematical physics and to the philosophy of the physical sciences; it is drawn up in such a way as to emphasize the real significance of both, as well as the originality and power of their author's thinking. The description is effected, to a slight extent, by reprinting some of the papers, but mainly by giving an analysis of the remaining papers and of a large mass of MSS., hitherto unpublished. It is no small tribute to the estimation in which McLaren was held by his contemporaries that four such eminent investigators should have co-operated in the work; that he was one of the most original scientific thinkers on the roll of Melbourne graduates, is beyond doubt.

A personal appreciation and a reprint, from the Proceedings of the London Mathematical Society, of an obituary notice are prefixed to the work itself, which is in three sections. The first section deals with problems in radiation and gravitation, and embodies, *inter alia*, the substance of an unpublished essay to which the Adams Prize was awarded. The second section deals with electromagnetic theory, mainly with a

brilliant attempt to explain the nature of magnetism; the third discusses some interesting problems in the theory of the dispersion of light.

The chief interest of McLaren's work, so far as our readers are concerned, lies in his contributions to the Quantum and Relativity Theories. Like other workers, such as Jeans and Poincaré, he satisfied himself as to the inadequacy of the classical theories for the explanation of radiation and the incorrectness of the adage *natura non facit saltum*; the special value of his demonstration is well put by Nicholson. "His point of view," writes the latter, "is essentially, and in fact, extremely individual, and so different, in its procedure, from that of others, that it may well be regarded as a fundamental contribution." It is, by the way, somewhat curious to compare the apathetic reception of the ideas of the quantum theory among philosophers with the interest taken in relativist ideas, though the latter are neither more revolutionary nor more fundamental than the former.

McLaren's view of relativity—or, as it would now be styled, "special" relativity—is original and interesting. He regards physics as dealing with a single "ultimate" substance, a fluid the density and motion of which are, at all points, continuous; this substance has two forms, "matter" and "æther," mutually exclusive at any point of space; "matter" is where the fluid grows or decays, "æther" is where neither growth nor decay occurs. To account for gravitation, electromagnetism and radiation theory on this very general hypothesis, he finds it necessary to assume the physical reality of a fourth dimension; he proclaims himself "a convert to the view that Minkowski did not raise a fiction . . . but . . . a structure which, *as reality*, is a necessary inference from ordinary experience." McLaren's four-dimensional structure is not, however, the same as Minkowski's; his fourth dimension is not a time dimension, but an additional space dimension, of different character from the other three; its symbol enters into the expression of a four-dimensional space-element, somewhat as the time symbol does into that of a Minkowski space-time element. Again Minkowski's universe is devoid of change, McLaren's is neither timeless nor devoid of motion; in the latter, time is a *logical* succession; ; "the symbol of an order in which the elements of Minkowski's space are thought" (not "throughout" as mis-spelled on p. 30 of the work under review). He also calls it "the *absolute* time of an *unchanging* universe," which is to be contrasted with the relative or "local times" appertaining to different parts of the "æther." He employs the terms "before" and "after" in the same sense as Robb does in his "Theory of Time and Space." McLaren's notions of time obviously differ *toto coelo* from Einstein's or Minkowski's; on the other hand, they challenge a comparison with those developed later in Bergson's "Durée et Simultanéité." Unlike as this theory is to its rivals, it undoubtedly led its author to anticipate the results, respecting the influence of gravity on radiation, deduced and published by Einstein and Abrahams. It must be remembered that all this took place prior to the evolution, in

Einstein's mind, of the theory of "general" relativity; all the same, if McLaren's ideas were to be developed, in a similar way to Einstein's, from a "special" to a "general" theory, they would probably prove to be of much more than mere historical interest.

—E. F. J. Love.

REICHL'S PHILOSOPHISCHER ALMANACH auf das Jahr, 1924:
Immanuel Kant zum Gedächtnis, 22 April, 1924; hrsg. von Paul Feldkeller. pp. 479. Otto Reichl Verlag, Darmstadt, 1924.

The enterprising Darmstadt publishing house, Otto Reichl Verlag, which specialises in works on philosophy, first published in 1923 Reichl's philosophischer Almanach, edited by Paul Feldkeller. This inaugural issue contained biographical notes on philosophers and historical sketches of philosophical societies and academies in Germany, as well as extracts from the works of Hegel, Jean Paul, von Stein, Paracelsus and others. The second (1924) issue of the Almanach has been dedicated to the memory of Immanuel Kant, as a contribution to the bicentenary celebrations. The greater portion of the Almanach contains articles and extracts on Kant's life, personality and work. In addition there are notes on philosophical congresses and institutions, and on outstanding works of reference in philosophy. The last one hundred and fifty pages contain an historical survey of the philosophical journals of Germany for the past 200 years.

Feldkeller considers that the history of philosophical journals reveals in highly coloured reflection the philosophical life of Germany for the past 200 years. In number and range they are unequalled in any other country. Philosophy has been more intimately associated with the main tenor of the life of the German nation than elsewhere. Philosophy helped considerably in the redemption of a fallen Germany over one hundred years ago; and may it now help Germany to find once more a place in the world of honourable understandings and willing co-operation for the uplift of all that is good among all peoples. In journals more than in books we come into immediate contact with the pulsating life of philosophical movements, glowing with the heat and glamour of controversies, and the vigorous cut and thrust of sterling earnest-minded opponents. Through the clash of many opinions the truths finally win their way out into the open realms of popular acceptance. The journals take us into the workshops for the fashioning of truth and principle. In books all is orderly arranged. The track is prepared for us. In the journals we have to thread our way through masses of facts and presentations of facts. And herein the greatness of the editor is revealed. He has to catch the spirit of the times, and arrange his material so as to give living expression to, and even guide the lines of development of, the great thoughts of the great thinkers with their legions of contemporaneous co-workers and disciples. The journals provide a common meeting ground for opinions new and old, and the editors sit at the office of toll determining what shall pass through to the other side of posterity. There are lonely thinkers who

have it not in them to act as editors, for these directors of thought must be possessed of a socializing consciousness; but in these days through the extended social service which an editor renders his community of readers, the thinkers that live solitary may co-operate with those whose presence is ever in the open concourse of makers and receivers of public opinion.

Feldkeller outlines the various needs and types of the German journals and classifies them as journals for (1) technical discussion, (2) critical reviews, (3) popular presentation, (4) reports of proceedings of meetings and congresses, (5) special phases or divisions of philosophy (metaphysics, ethics, education, religion, sociology), and psychology, and programmes of societies for spreading particular doctrines or increasing the study and influence of an outstanding thinker.

The period summarized by Feldkeller is divided into two main divisions, the pre-classical and classical (1715-1815) and the post-classical (1815-1900). In the days when Kantianism was at its height the periodicals were divided into two camps—Kantian and anti-Kantian. They were usually short-lived. Fichte, Schiller, Goethe, Schelling, Hegel, Schlegel, with many smaller men, participated in this journalistic fray. Many long-lived periodicals went down about the time of the war and after; but there are now signs of revival. Very few of the existing journals go back beyond 1900. Generally, the periodicals have had a chequered career, ending when the special programme or propaganda had run its course, or the genius of the editor had departed from his successors. The United States at present supports a philosophical and psychological periodical literature comparable with that of Germany. Unfortunately the same cannot be said of England. The editor of the *Almanach* announces that he intends to publish later a world list of current philosophical periodicals. We are glad to know that Australia will not be unrepresented.

—E. Morris Miller.

MIND IN THE PARMENIDES. A Study in The History of Logic. By Donald Sage Mackay. Printed by Clyde Browne, Los Angeles. Pp. 114.

This is a Columbia University doctorate thesis. After the chief attempts to interpret the *Parmenides* have been reviewed, the author gives his own interpretation, according to which the significance of the dialogue is logical, not epistemological or metaphysical. The *aporiae* forming the starting-point of the discussion are supposed to be due to confusion of the intensional and extensional meaning in a judgment, and, through Plato's attempt to clarify this distinction, the *Parmenides* is "our earliest work in logic, as a science, anticipating in many important respects the more formal and systematic treatises of Aristotle" (p. 88). In an Appendix is given a detailed analysis of the second part of the dialogue.

—B. Muscio.

THE WORD OF LALLA THE PROPHETESS. Done into English Verse by Sir Richard Carnac Temple. Cambridge Press. 1924. 16/- net.

Lal Ded (or Lalla) was a mystic poetess of Kashmir in the fourteenth century, an adherent of the Shaiva Yogi form of Hinduism, but influenced also by the great saint of Kashmir, Ali Hamadani, and others of the Moslem faith. Given to wandering and frenzy, she had also a shrewd mind and a power of homely illustration, which has made many of her verses and sayings household words in Kashmir to the present day.

The original text of the verses (Lalla-vakyani) was edited by Grierson and Barnett and published by the Royal Asiatic Society with translation and notes five years ago, but Sir Richard Temple (now in his seventy-fifth year) has thought it worth while to make them more accessible to non-Indian Scholars in a free verse translation (71 pp.) with two long essays on the "Sources of Lalla's Religion" (94 pp.) and "Lalla's Religion, Theory, and Doctrine" (54 pp.), also a useful Glossary of Oriental Terms (32 pp.) and an Index.

The first essay is larger in scope than the title would indicate, for it is really a sketch of Indian thought, piety, and philosophy from Vedic times up to the present, with an attempt to show the effect of outside influences, especially in the early stages.

The second essay is an extensive but very technical account of the Trika (triple) philosophy, which originated about 900 A.D. as a strict Monism. Shiva is the one reality; the soul created by him a "non-spatial point." Shiva is all-transcending, but in another aspect immanent and as such is Shakti, a female creative power. The expansion of Shakti "builds up the infinite variety of beings and things that appear to make up the Universe out of fundamental principles of evolution or development or factors." On this is built up with all the minute detail of Indian thought a system both of faith and practice that can be followed in this essay.

On turning to the actual poems one is struck by the contrast between the technical expression of her faith and the practical application of it. Her one object is absorption into the Supreme "as Christians would put it to make sure of salvation." Esoteric knowledge, not works, will bring Release. But Lalla is a live woman, and her poetry is full of illustrations from the everyday life of India. The elephant "begging every hour to be fed"; the sugar-load "upon my back"; the poppies "sons as bright and welcome as the flowers"; the pigeon-loft "filled with longings"; the cotton-bloom as it passes from plant to garment are a few of the illustrations that are skilfully used to propagate the Yogi teaching. Her poem on resignation is said to be quoted still by Kashmiris in times of trouble. Students of Indian philosophy and of Comparative Religions are alike indebted to Sir Richard Temple for this book.

—G. W. Thatcher.

THE PURPOSE OF EDUCATION. An Examination of Educational Problems in the light of recent scientific research. By St. George Lane Fox Pitt. Cambridge University Press. 4/- net. 1924. pp. xvii—92.

The first edition of this book appeared in 1913. In his preface to the present edition the author states that the main contention of the book is "that both as to aim and method, modern education is often faulty in that the excessive desire shown to obtain tangible results of a practical nature has had the effect of obscuring its ideals and perverting its methods."

Unfortunately no evidence is offered in proof of this contention, nor is any examination made of current educational problems of either aim or method.

The several chapters are devoted to somewhat desultory discussions of a number of ethical and psychological concepts. But no attempt is made to show how the author's ethical and psychological opinions would affect either the theory or the practice of education.

The book has no value as a contribution to the study of either educational theory or practice.

—A. Mackie.

THE CONTROL OF INDUSTRY (Christian Order of Industry Series, No. 6.) The Homestead. York. 1925. Pp. 71.

Report of a Conference held at Balliol College, Oxford, Jan. 9/12/1925, to discuss the resolution of the Copec Conference that "Industry should be so recognised that all those engaged in it shall have an increasingly effective voice in determining the conditions of their work and lives." Contains valuable contributions by Dr. C. H. Northcott, L. Urwick, and others. The Reports of these Oxford Conferences are well worth reading, and should be widely circulated.

"POLLY HEDRON, COGITATIONS CONCERNING SUBCONSCIOUSNESS." By Norman S. Osbourne. Henry G. Forster, 160 Castle-reagh Street, Sydney. 1925. Price 3/6.

The writer sees in almost everything an expression of a deeper aspect of the Universe. In this he is something of a mystic and a good deal of an idealist; but he is an interesting and very well read idealist. Indeed, his exposition is so enriched with quotation and illustration that his message comes through with difficulty. Nevertheless, one feels he has the truth of the matter. He is an intuitionist rather than a rationalist; he is interested more in Life than in mere logic; he is rather scornful of the glibness of the Freudian treatment of the subconscious; he would have the poet's inspiration spring from this deeper aspect of life.

A few citations will give the author's point of view: "What I would convey, then, is that beyond or 'within' all sides is a centre of gravity, the hearth-fire of the Universe; where free from the pull of any and all phases, is the Central Life of Peace that passeth Understanding." "We may see how that which dreams in Raphael's Madonnas, hovers about

Corot's tree; that which calls Turner from the glory of sunsets over wide spaces, whispers Corot in the forest glades at dawn." "Granting that primal harmony in a man, we may count on it winning to expression some way: whether it take shape among us as poem, picture-symphony, or in a life well lived, need hardly be matter for our troubling: so it flows from Cosmic fountains, its authenticity will be revealed in what we term tone, color, rhythm, harmony, proportions."

How shrewd and sound the author's judgment can be is evidenced by the following critical remark: "Freud, say, would have 'Sex' set about and behind these activities. If by 'sex' he would connote 'life-desire,' then maybe the flowers would smile with him, the stars twinkle approval."

The book is, however, marked by an exposition of the theme so overburdened by illustration and incident as to be somewhat irritating.

—H. T. Lovell.

JOURNALS RECEIVED.

THE JOURNAL OF PHILOSOPHY. Edited by Professors Woodbridge and Bush, Columbia University. Published fortnightly: four dollars per annum.

Vol. XXII. No. 1. Jan. 1, 1925. Francis Herbert Bradley: B. Blanchard. The Non-Existence of Time; C. J. Ducasse. No. 2. Jan. 15. "Things": G. S. Fullerton. Behaviourism and Purpose: E. C. Tolman. Twenty-fourth Annual Meeting of the Eastern Division of the American Philosophical Association: H. W. Schneider. No. 3. Jan. 29. Valuing and the Quality of Value: M. E. Clarke. Personality as a Category: C. L. Barrett. No. 4. Feb. 12. Social Interpretations of Ethics: W. B. Mahan. Is Purpose only Mechanism Imperfectly Understood? W. D. Wallis. No. 5. Feb. 26. The Insurgence against Reason, I.: M. R. Cohen. The Meaning of Value: John Dewey.

PSYCHE. Edited by C. K. Ogden. Kegan Paul, Trench, Trübner & Co., London. Published Quarterly. Price 5/-.

Vol. V. No. 3. Jan. 1925. Complex and Myth in Mother-right: B. Malinowski. The Nature of Genius: G. Ambrose. The Limitations of Experimental Aesthetics: H. D. Waley. Experiences with Two Psychoanalysts: W. P. Farrow. The Divorce from Symbiosis: H. Reinheimer. Helpful Imagination: A. M. Mantell. The Shelleyan Ethos and Pathos.

DIVUS THOMAS. Commentarium de Philosophia et Theologia. Collegio Alberoni. Piacenza. Published Quarterly. Annual subscription, 25 Lire.

28th Year. No. 1. Jan. 1925. Principium causalitatis et existentia Dei: S. Bersani. Einstein y S. Tomas: L. Urbano. De doctrina hylemorphica: P. Geny. Circa Dogmatum homogeneam evolutionem: R. Schultes. Ultrum possit Summus Pontifex delegare simplicem presbyterum ad conferendum diaconatum vel etiam presbyteratum?

E. Hugon. *La relatività di Einstein e la metafisica*: R. Petrone. Ugo di Mortagne autore della *Summa Sententiarum*? P. Castagnoli.

INTERNATIONAL JOURNAL OF PSYCHO-ANALYSIS, Official Organ of the International Psycho-Analytical Association. Edited by Ernest Jones. Baillière, Tindall & Cox. London. Published Quarterly. Annual Subscription, 30/-.

Vol. VI. Part 1. Jan. 1925. Congress Symposium. Introduction: Ernest Jones. Metaphysical Points of View in Technique and Theory: Hans Sachs. A Metapsychological Description of the Process of Cure: Franz Alexander. The Economic Principle in Psycho-analytic Technique: Sandor Rada. Shorter Communications, Abstracts and Reviews.

ARCHIVES OF PSYCHOLOGY AND PEDAGOGICS, Sweden. Vol. III., Nos. 1-4, 1924.

On inner and outer experience: Axel Dam. The School and the choice of occupation: I. Norinder. Physiological Basis of our organic perceptions, feelings, and inclinations: A. H. Bjarnason. (After referring to McDougall's Social Psychology, and Shand's Foundations of Character, the author says,—“On may thus say that more has been done for the psychology of the feelings during the last ten years in the English speaking world than has been done in the rest of the world during the previous two generations.”) Measurements of Intelligence, II: Anderberg and others. The riddle of small numbers: K. Kronan. (A discussion of the consonance and dissonance theories of Helmholtz. On the so-called measurements of intelligence and their significance for differentiation within the school: F. Berlind. The substantive in the one-word sentence: G. Freudenthal. (A study of the beginner's stage in the speech of children). The Psychology of Time: K. K. Korsten. On Freud's last pronouncements on the Unconscious: E. av Geijerstam. In Memoriam—Elias C. Grenander (first Lecturer in Pedagogics, Upsala University): D. Lund.

SCHOOLING. Teachers' College Press. Sydney. Five issues yearly. 5/- per annum. Edited by A. Mackie and P. R. Cole.

Vol. VIII. No. 2. Nov. 1924. Editorial Notes. The Dalton Plan in England I: H. J. Meldrum. The Continuation School Movement: C. J. White. The Ben Jonson's Girls' School: R. G. Cameron. Verse Making by Children: A. Mackie. The Sydney Teachers' College Group Scale: G. E. Phillips. No. 2. Dec. 1924. Training of Teachers: A. Mackie. A Poetry Lesson: E. S. Skillen. The Equipment of London Schools: R. G. Cameron. Sydney Teachers' College Group Scale II: G. E. Phillips.

THE MEDICAL JOURNAL OF AUSTRALIA. Sydney. Published weekly. 1/-.

THE LEGAL JOURNAL. Sydney. Published monthly. 10/6 per annum.

NOTES AND NEWS.

The Third Annual Meeting of the Australasian Association of Psychology and Philosophy was held at the University of Sydney, May 21st-23rd. The Inaugural Address was delivered by the Retiring President, Professor W. R. Boyce Gibson,—subject: *Does the Ideal Really Exist?* During the other four sessions, papers on the following subjects were read and discussed:— *Psycho-biology and Democracy*: Professor W. Anderson, Auckland. *The Problem of Time in Contemporary Philosophy*: Professor J. Alexander Gunn, Melbourne. *Kemp Smith's Theory of Sensa*: H. C. Becroft, Auckland. *The Intelligence of Juvenile Delinquents*: Lucy Firth, Sydney. *Studies from a Psychological Clinic*: Professor E. Morris Miller, Hobart. *Ethnological Types*: Professor Griffith Taylor, Sydney. *The Case for Psychological Investigation of Immigrants*: Dr. A. H. Martin, Sydney. *Economic Aspects of Population*: Professor R. C. Mills, Sydney. Some of these papers will be published in later numbers of the Journal.

The first meeting of the Sydney Branch of the Association was held at the University, on May 7th, when Professor Lovell (re-elected President) read a paper on "The Mind of Primitive Man."

A new branch of the Association has been constituted at Auckland, N.Z. (Hon. Secretary and Treasurer, H. C. Becroft, M.A., 29 Wairiki Rd., Mt. Eden, Auckland); and arrangements have been made for the constitution of another branch at Victoria College, Wellington, N.Z. Secretaries of all local branches of the Association are requested to send reports to the Editor of the Journal.

Miss D. M. Rivett, M.A., has been appointed Assistant Lecturer in Philosophy at Sydney University, under the new scheme for the extension of University teaching to country districts of N.S.W. The following new appointments have also been made at Sydney University:— Demonstrator in Psychology: B. C. Doig, B.A. Tutor in Psychology and Philosophy: Kathleen M. Donovan, M.A. Science Research Lecturer in Psychology: R. Simmat, B.A.

We grieve to record the death of an esteemed contributor to the Journal and a member of the Association, the Rev. N. J. Cocks, M.A. Mr. Cocks was a man of many-sided culture, with a distinctly original philosophical and poetic capacity. He was Gold Medallist in Philosophy at Sydney University, 1892.

